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# Geometrical product specifications (GPS) — Standard reference temperature for the specification of geometrical and dimensional properties

*Spécification géométrique des produits (GPS) — Température normale de référence pour la spécification des propriétés géométriques et dimensionnelles*

Reference number
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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).

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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html .

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

This third edition cancels and replaces the second edition (ISO 1:2002), which has been technically revised. Specifically, the following points have changed:

— the standard reference temperature definition has been included; consequently, the title, introduction and scope, have been changed;

— the general definition of reference temperature has been included.

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# Introduction

This International Standard is a geometrical product specification (GPS) standard and is to be regarded as a fundamental GPS Standard (see ISO 14638:2015[1]). For more detailed information on the relationship of this International Standard to other standards and the GPS matrix model, see Annex B.

The definitions of the units, including those of length and temperature, are adopted by the General Conference of Weights and Measures (CGPM) under the authority of the Convention of the Metre. These definitions are maintained in the SI brochure.[5]

The unit of length, the metre, is independent of temperature. The current definition of the metre[6] is based on the distance light travels in vacuum during a unit of time. However, a physical object is subject to thermal expansion and consequently, its geometrical and dimensional properties are dependent on its temperature. Specifying a reference temperature allows the geometrical and dimensional properties of a physical object to be unambiguously stated.

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