Norma Española

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Idioma: Inglés

Especificación geométrica de productos (GPS). Tolerancia geométrica. Tolerancias de forma, orientación, localización y alabeo (ISO 1101:2017). (Ratificada por la Asociación Española de Normalización en abril de 2017.)

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Geometrical product specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out (ISO 1101:2017) (Endorsed by Asociación Española de Normalización in April of 2017.)

Spécification géométrique des produits (GPS) - Tolérancement géométrique - Tolérancement de forme, orientation, position et battement (ISO 1101:2017) (Entérinée par l'Asociación Española de Normalización en avril 2017.)

En cumplimiento del punto 11.2.5.4 de las Reglas Internas de CEN/CENELEC Parte 2, se ha otorgado el rango de documento normativo español UNE al documento normativo europeo EN ISO 1101:2017 (Fecha de disponibilidad 2017-02-15)

Este documento está disponible en los idiomas oficiales de CEN/CENELEC/ETSI.

Este anuncio causará efecto a partir del primer día del mes siguiente al de su publicación en la revista AENOR.

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Las observaciones a este documento han de dirigirse a:

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EUROPEAN STANDARD
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English Version

Geometrical product specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out (ISO 1101:2017)

Spécification géométrique des produits (GPS) - Tolérancement géométrique - Tolérancement de forme, orientation, position et battement (ISO 1101:2017)

Geometrische Produktspezifikation (GPS) - Geometrische Tolerierung - Tolerierung von Form, Richtung, Ort und Lauf (ISO 1101:2017)

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN ISO 1101-1:2017) has been prepared by Technical Committee ISO/TC 213 "Dimensional and geometrical product specifications and verification" in collaboration with Technical Committee CEN/TC 290 "Dimensional and geometrical product specification and verification" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2017 and conflicting national standards shall be withdrawn at the latest by August 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 1101:2013.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 1101:2017 has been approved by CEN as EN ISO 1101:2017 without any modification.

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

This document was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verifications*.

This fourth edition cancels and replaces the third edition (ISO 1101:2012), which has been technically revised.

It also incorporates the Technical Corrigendum ISO 1101:2012/Cor.1:2013.

The main changes are as follows.

— Tools have been added to specify the filtering of the toleranced feature and a line type has been designated for its illustration.

— Tools have been added to tolerance associated features.

— Tools have been added to specify form characteristics by specifying the reference feature association and the specified parameter.

— Tools have been added to specify the constraints to the tolerance zone.

— The rules for specifications using "all around" or "all over" modifiers have been clarified.

— The direction of the tolerance zone in the case of roundness tolerances for revolute surfaces that are neither cylindrical nor spherical, e.g. cones shall now always be indicated to avoid an exception to the general rule that specifications for integral features apply perpendicular to the surface.

— The "from-to" symbol has been retired and replaced by the "between" symbol.

Introduction

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, B and C of the chain of standards on form, orientation, location and run out.

The ISO GPS Masterplan 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. The default decision rules given in ISO 14253-1 apply to specifications made in accordance with this document, unless otherwise stated.

For more detailed information on the relation of this document to the GPS matrix model, see Annex G.

This document represents the initial basis and describes the required fundamentals for geometrical tolerancing. Nevertheless, it is advisable to consult the separate standards referenced in Clause 2 and in Tables 3 and 4 for more detailed information.

For the presentation of lettering (proportions and dimensions), see ISO 3098-2.

All figures in this document for the 2D drawing indications have been drawn in first-angle projection with dimensions and tolerances in millimetres. It should be understood that third-angle projection and other units of measurement could have been used equally well without prejudice to the principles established. For all figures giving specification examples in 3D, the dimensions and tolerances are the same as for the similar figures shown in 2D.

The figures in this document represent either 2D drawing views or 3D axonometric views on 2D drawings and are intended to illustrate how a specification can be fully indicated with visible annotation. For possibilities of illustrating a specification where elements of the specification may be available through a query function or other interrogation of information on the 3D CAD model and rules for attaching specifications to 3D CAD models, see ISO 16792.

The figures in this document illustrate the text and are not intended to reflect an actual application. Consequently, the figures are not fully dimensioned and specified, showing only the relevant general principles. Neither are the figures intended to imply a particular display requirement in terms of whether hidden detail, tangent lines or other annotations are shown or not shown. Many figures have lines or details removed for clarity, or added or extended to assist with the illustration of the text. See Table 1 for the line types used in definition figures.

In order for a GPS specification to be unambiguous, the partition defining the boundary of the toleranced feature, as well as the filtering, has to be well defined. Currently, the detailed rules for partitioning and the default for filtering are not defined in GPS standards.

For a definitive presentation (proportions and dimensions) of the symbolization for geometrical tolerancing, see ISO 7083 and Annex F.

Annex A has been provided for information only. It presents previous drawing indications that have been omitted here and are no longer used.

For the purposes of this document, the terms “axis” and “median plane” are used for derived features of perfect form, and the terms “median line” and “median surface” for derived features of imperfect form. Furthermore, the following line types have been used in the explanatory illustrations, i.e. those representing non-technical drawings for which the rules of ISO 128 (all parts) apply.