# Geometrical product specifications (GPS) - Dimensioning and tolerancing - Non-rigid parts (ISO 10579:2010 including Cor 1:2011)



EESTI STANDARDIKESKUS
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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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| See Eesti standard EVS-EN ISO 10579:2013 sisaldab Euroopa standardi EN ISO 10579:2013 ingliskeelset teksti. | This Estonian standard EVS-EN ISO 10579:2013 consists of the English text of the European standard EN ISO 10579:2013. |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 31.07.2013. | Date of Availability of the European standard is 31.07.2013. |
| Standard on kättesaadav Eesti Standardikeskusest. | The standard is available from the Estonian Centre for Standardisation. |



Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

# Geometrical product specifications (GPS) - Dimensioning and tolerancing - Non-rigid parts (ISO 10579:2010 including Cor 1:2011)

Spécification géométrique des produits (GPS) - Cotation et tolérancement - Pièces non rigides (ISO 10579:2010, Cor 1:2011 inclus)

Geometrische Produktspezifikation (GPS) - Bemaßung und Tolerierung - Nicht-formstabile Teile (ISO 10579:2010 + Cor 1:2011)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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# Foreword

The text of ISO 10579:2010 including Cor 1:2011 has been prepared by Technical Committee ISO/TC 213 “Dimensional and geometrical product specifications and verification” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 10579:2013 by 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 January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**Endorsement notice**

The text of ISO 10579:2010 including Cor 1:2011 has been approved by CEN as a EN ISO 10579:2013 without any modification.

# Introduction

This International Standard is a geometrical product specification (GPS) standard and is to be regarded as a global GPS standard (see ISO/TR 14638)[4]. It influences chain links 1, 2 and 3 of the chain of standards on form of line independent of datum, form of line dependent on datum, form of surface independent of datum, form of surface dependent on datum, orientation, location, circular run-out and total run-out in the general GPS matrix.

For more detailed information on the relation of this standard to other standards and the GPS matrix model, see Annex B.

Certain parts, when removed from their manufacturing environment, may deform significantly from their defined limits owing to their weight, flexibility or the release of internal stresses resulting from the manufacturing processes.

These parts are defined as “non-rigid parts” and the deformation is acceptable provided that the parts may be brought within the indicated tolerance by applying reasonable force to facilitate inspection and assembly.

Depending on the design function and the part's interface with its mating components, instead of, or in addition to, assessing the part conventionally (in its free state condition), it may be necessary to assess the part when subject to restraint that is no greater than those accepted in the assembled condition.

Parts in this category include both those of inherently rigid material (such as thin metal parts) and those of inherently flexible material (such as rubber, plastics, etc.).

# Geometrical product specifications (GPS) — Dimensioning and tolerancing — Non-rigid parts



## 1 Scope

This International Standard gives rules for dimensioning and tolerancing non-rigid parts where restraining of features is required during verification of dimensions and tolerances specified on a drawing.

## 2 Normative references

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

ISO 1101:2004, *Geometrical Product Specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1**
**non-rigid part**
part which deforms to an extent that in the free state is beyond the dimensional and/or geometrical tolerances on the drawing

**3.2**
**free state**
condition of a part subjected only to the force of gravity

## 4 Basic principles

The distortion of a non-rigid part must not exceed that which allows the part to be brought within specified tolerances for verification and positioning at assembly, or assembled, by applying pressure or forces not exceeding those which can be expected under normal assembly conditions. It is impossible to avoid the effect of natural forces such as gravity, but the extent of distortion may depend upon the orientation of the part and condition of the part in the free state. If it is necessary to indicate the tolerance in the free state, the conditions under which the tolerance is to be achieved (i.e. the direction of gravity, conditions in which it is to be supported, etc.) may have to be indicated in a note, as shown in Annex A. For non-rigid parts, identified on the drawing by the added statement “ISO 10579-NR”, the restrained condition applies unless the dimensions and tolerances are qualified by the symbol Ⓕ, see Clause 5.