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**Geometrical product specifications (GPS) -  
Geometrical tolerancing - Positional  
tolerancing**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 5458:2001 sisaldab Euroopa standardi EN ISO 5458:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 5458:2001 consists of the English text of the European standard EN ISO 5458:1998.</p> <p>This document is endorsed on 18.06.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> This International Standard describes positional tolerancing. This tolerancing method is applied to the location of a point, of a line nominally straight and of a surface nominally plane, e.g. the centre of a sphere, the axis of a hole or shaft and the median surface of a slot.</p>	<p><b>Scope:</b> This International Standard describes positional tolerancing. This tolerancing method is applied to the location of a point, of a line nominally straight and of a surface nominally plane, e.g. the centre of a sphere, the axis of a hole or shaft and the median surface of a slot.</p>
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**ICS** 01.100.20

**Võtmesõnad:** dimensioning, drawings, geometrical tolerances, technical drawings, tolerances of position

ICS 01.100.01

Descriptors: GPS, geometrical tolerancing.

**English version**

Geometrical Product Specifications (GPS)

**Geometrical tolerancing**

Positional tolerancing  
(ISO 5458 : 1998)

Spécification géométrique des  
produits (GPS) – Tolérancement  
géométrique – Tolérancement de  
localisation (ISO 5458 : 1998)

Geometrische Produktspezifikationen  
(GPS) – Form- und Lagetolerierung –  
Positionstolerierung (ISO 5458 : 1998)

This European Standard was approved by CEN on 1998-12-15.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

## Foreword

International Standard

ISO 5458:1998 Geometrical Product Specifications (GPS) – Geometrical tolerancing – Positional tolerancing, which was prepared by ISO/TC 213 'Dimensional and geometrical product specifications and verification' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 290 'Dimensional and geometrical product specifications and verification', the Secretariat of which is held by DIN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by June 1999 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 5458 : 1998 was approved by CEN as a European Standard without any modification.

## Introduction

This International Standard is a geometrical product specification (GPS) standard and is to be regarded as a general GPS standard (see ISO/TR 14638). It influences chain links 1 and 2 of the chain of standards on location.

For more detailed information of the relation of this standard to the GPS matrix model, see annex C.

This International Standard is intended to promote the relationship between the designer and the manufacturer.

The concept of positional tolerancing, as described in ISO 1101, is further elaborated in this International Standard.

The figures in this International Standard serve to illustrate the subject matter only and are not necessarily complete.

Other relevant International Standards, such as those dealing with the maximum material requirement (ISO 2692), datums and datum systems (ISO 5459), should be taken into consideration when using this International Standard.

For the purposes of this International Standard, all dimensions and tolerances on the drawings have been shown in vertical lettering. It should be understood that these indications could just as well be written in free-hand or inclined (italic) lettering without altering the meaning of the indications.

For the presentation of lettering (proportions and dimensions), see ISO 3098-1.

## 1 Scope

This International Standard describes positional tolerancing. This tolerancing method is applied to the location of a point, of a line nominally straight and of a surface nominally plane, e.g. the centre of a sphere, the axis of a hole or shaft and the median surface of a slot.

NOTE Profile tolerancing is used when lines are not intended to be straight or surfaces are not intended to lie in a plane; see ISO 1660.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1101:—<sup>1)</sup>, *Geometrical Product Specifications (GPS) — Geometrical tolerancing — Generalities, definitions, symbols, indication on drawings*

## 3 Definitions

Definitions related to features are under development and will be issued as ISO 14660-1. This work will result in new terms that are different from those used in this International Standard. These new terms are defined in annex A and appear in the main body of this International Standard in parentheses next to the currently used term .

## 4 Establishment of positional tolerances

### 4.1 General

The primary constituents are theoretically exact dimensions, tolerance zones and datums.

### 4.2 Fundamental requirement

Positional tolerances are associated with theoretically exact dimensions and define the limits for the location of actual (extracted) features, such as points, axes, median surfaces, nominally straight lines and nominally plane surfaces relative to each other or in relation to one or more datums. The tolerance zone is symmetrically disposed about the theoretically exact location.

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<sup>1)</sup> To be published. (Revision of ISO 1101:1983)