

# SLOVENSKI STANDARD

## SIST EN ISO 14253-1:2000

01-december-2000

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### **Geometrical Product Specifications (GPS) - Inspection by measurement of workpieces and measuring equipment - Part 1: Decision rules for proving conformance or non-conformance with specifications (ISO 14253-1:1998)**

Geometrical Product Specifications (GPS) - Inspection by measurement of workpieces and measuring equipment - Part 1: Decision rules for proving conformance or non-conformance with specifications (ISO 14253-1:1998)

Geometrische Produktspezifikation (GPS) - Prüfung von Werkstücken und Meßgeräten durch Messen - Teil 1: Entscheidungsregeln für die Feststellungen von Übereinstimmung oder Nichtübereinstimmung mit Spezifikationen (ISO 14253-1:1998)

[SIST EN ISO 14253-1:2000](https://standards.iteh.ai/catalog/standards/sist/0ad04f97-23bc-4180-b1e1-100000000000/iso-14253-1-1998)

Spécification géométrique des produits (GPS) - Vérification par la mesure des pièces et des équipements de mesure - Partie 1: Règles de décision pour prouver la conformité ou la non conformité a la spécification (ISO 14253-1:1998)

**Ta slovenski standard je istoveten z: EN ISO 14253-1:1998**

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#### **ICS:**

17.040.10	Tolerance in ujemi	Limits and fits
17.040.30	Merila	Measuring instruments

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN ISO 14253-1

November 1998

ICS 17.040.10

Descriptors: see ISO document

English version

**Geometrical Product Specifications (GPS) - Inspection by  
measurement of workpieces and measuring equipment - Part 1:  
Decision rules for proving conformance or non-conformance with  
specifications (ISO 14253-1:1998)**

Spécification géométrique des produits (GPS) - Vérification  
par la mesure des pièces et des équipements de mesure -  
Partie 1: Règles de décision pour prouver la conformité ou  
la non-conformité à la spécification (ISO 14253-1:1998)

Geometrische Produktspezifikation (GPS) - Prüfung von  
Werkstücken und Meßgeräten durch Messen - Teil 1:  
Entscheidungsregeln für die Feststellungen von  
Übereinstimmung oder Nichtübereinstimmung mit  
Spezifikationen (ISO 14253-1:1998)

This European Standard was approved by CEN on 8 November 1998.

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.

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 Central Secretariat has the same status as the official versions.

<https://standards.cen.org/catalog/standards/sist/0ad04d7-25bc-4180-b1e1-7edad0b25ff6/sist-en-iso-14253-1-2000>

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



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

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

Page 2  
EN ISO 14253-1:1998

## Foreword

The text of the International Standard ISO 14253-1:1998 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 DIN.

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 May 1999, and conflicting national standards shall be withdrawn at the latest by May 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

### Endorsement notice

The text of the International Standard ISO 14253-1:1998 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

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**Annex ZA (normative)**  
**Normative references to international publications**  
**with their relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 8402	1994	Quality management and quality assurance - Vocabulary	EN ISO 8402	1995

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# INTERNATIONAL STANDARD

# ISO 14253-1

First edition  
1998-11-15

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## Geometrical Product Specifications (GPS) — Inspection by measurement of workpieces and measuring equipment —

### Part 1:

Decision rules for proving conformance or non-  
conformance with specifications

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*Spécification géométrique des produits (GPS) — Vérification par la mesure  
des pièces et des équipements de mesure —*

*Partie 1: Règles de décision pour prouver la conformité ou la non-  
conformité à la spécification*

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Reference number  
ISO 14253-1:1998(E)

## ISO 14253-1:1998(E)

## Contents

1 Scope .....	1
2 Normative references .....	1
3 Definitions .....	2
4 General.....	6
5 Proving conformance and non-conformance with specifications.....	7
5.1 General.....	7
5.2 Rule for proving conformance with specifications .....	8
5.3 Rule for proving non-conformance with specifications .....	9
5.4 Uncertainty range .....	10
6 Application in a supplier/customer relationship .....	11
6.1 General.....	11
6.2 Supplier proving conformance.....	12
6.3 Customer proving non-conformance .....	12
Annex A (informative) Relation to the GPS matrix model.....	13
Annex B (informative) Bibliography .....	15

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SIST EN ISO 14253-1:2000  
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Printed in Switzerland



## 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.

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.

International Standard ISO 14253-1 was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

This part of ISO 14253 cancels and replaces clause 4 of ISO/R 1938:1971 which concerns indicating measurement instruments and uncertainty of measurement. The rules given in ISO/R 1938:1971 is no longer sufficient and do not correspond to the GUM method, which is now the uncertainty of measurement method in the field of GPS.

ISO 14253 consists of the following parts, under the general title *Geometrical product specifications (GPS) — Inspection by measurement of workpieces and measuring equipment*:

- Part 1: Decision rules for proving conformance or non-conformance with specification
- Part 2: Guide to the estimation of uncertainty in measurement in calibration of measuring equipment and product verification
- Part 3: Procedures for evaluating the integrity of uncertainty of measurement values

Annexes A and B of this part of ISO 14253 are for information only.

## Introduction

This part of ISO 14253 is a geometrical product specifications (GPS) standard and is to be regarded as a global GPS standard (see ISO/TR 14638). It influences the chain links 4, 5 and 6 of all chains of general GPS standards.

For more detailed information on the relation of this part of ISO 14253 to other standards and the GPS matrix model see annex A.

The estimated uncertainty of measurement is to be taken into account when providing evidence for conformance or non-conformance with specification.

The problem arises when a measurement result falls close to the upper or lower specification limit. In this case it is not possible to prove conformance or non-conformance with specifications, since the measurement result plus or minus the expanded uncertainty of measurement includes one of the specification limits.

Therefore a supplier/customer agreement should be foreseen in order to solve the problems which could arise. This part of ISO 14253 explains how to handle specification, uncertainty of measurement and establishes decision rules for proving conformance or non-conformance with specification.

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# Geometrical Product Specifications (GPS) — Inspection by measurement of workpieces and measuring equipment —

## Part 1:

## Decision rules for proving conformance or non-conformance with specifications

### 1 Scope

This part of ISO 14253 establishes the rules for determining when the characteristics of a specific workpiece or measuring equipment are in conformance or non-conformance with a given tolerance (for a workpiece) or limits of maximum permissible errors (for a measuring equipment), taking into account the uncertainty of measurement.

It also gives rules on how to deal with cases where a clear decision (conformance or non-conformance with specification) cannot be taken, i.e. when the measurement result falls within the uncertainty range (see 3.23) that exists around the specification limits.

This part of ISO 14253 applies to specifications defined in general GPS standards (see ISO/TR 14638), i.e. standards prepared by ISO/TC 213, including

- workpiece specifications (usually given as tolerance limits), and
- measuring equipment specifications (usually given as maximum permissible errors).

It may also apply to specifications other than those defined in connection with general GPS standards.

This part of ISO 14253 does not apply to inspection using limit gauges. Inspection with limit gauges is covered by ISO/R 1938.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 14253. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 14253 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of valid International Standards.

ISO 3534-2:1993, *Statistics — Vocabulary and symbols — Part 2: Statistical quality control*.

ISO 8402:1994, *Quality management and quality assurance — Vocabulary*.

*Guide to the expression of uncertainty in measurement (GUM)*, 1st edition, 1995.

*International vocabulary of basic and general terms in metrology (VIM)*. BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OIML, 2nd edition, 1993.