SLOVENSKI PREDSTANDARD

oSIST prEN ISO 13385-1:2005

november 2005

Geometrijska specifikacija proizvoda – Oprema za merjenje dimenzij – 1. del: Konstrukcija kljunastega merila in meroslovne zahteve (ISO/DIS 13385-1:2005)

Geometrical product specifications (GPS) - Dimensional measuring equipment - Part 1: Calliper design and metrological requirements (ISO/DIS 13385-1:2005)

ICS 17.040.30

Referenčna številka
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EUROPEAN STANDARD

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English Version

Geometrical product specifications (GPS) - Dimensional measuring equipment - Part 1: Calliper design and metrological requirements (ISO/DIS 13385-1:2005)

Spécification géométrique des produits (GPS) - Instruments de mesurage dimensionnel - Partie 1: Spécifications de conception et spécifications métrologiques des pieds à coulisse (ISO/DIS 13385-1:2005)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 290.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Ref. No. prEN ISO 13385-1:2005: E

Foreword

This document (prEN ISO 13385-1:2005) 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 document is currently submitted to the parallel Enquiry.

Endorsement notice

The text of ISO/DIS 13385-1:2005 has been approved by CEN as prEN ISO 13885-1:2005 without any modifications.

DRAFT INTERNATIONAL STANDARD ISO/DIS 13385-1

ISO/TC **213** Secretariat: **DS**

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Geometrical product specifications (GPS) — Dimensional measuring equipment —

Part 1:
Calliper design and metrological requirements

Spécification géométrique des produits (GPS) — Instruments de mesurage dimensionnel —

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ISO/CEN PARALLEL ENQUIRY

The CEN Secretary-General has advised the ISO Secretary-General that this ISO/DIS covers a subject of interest to European standardization. **In accordance with the ISO-lead mode of collaboration as defined in the Vienna Agreement, consultation on this ISO/DIS has the same effect for CEN members as would a CEN enquiry on a draft European Standard.** Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month FDIS vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this part of ISO 13385 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13385-1 was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specification and verification*.

This second edition cancels and replaces ISO 3599:1976 and ISO 6906:1984 of which has been technically revised.

ISO 13385 consists of the following parts, under the general title *Geometrical product specification (GPS) — Dimensional measuring equipment*:

— *Part 1: Callipers; Design and metrological requirements*

— *Part 2: Calliper depth gauges; Design and metrological requirements*

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 link 5 of the chains of standards on size and distance 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 F.

ISO 14978 should also be available when reading this standard.

Geometrical product specifications (GPS) — Dimensional measuring equipment —

Part 1:
Calliper design and metrological requirements

1 Scope

This International Standard provides the most important design and metrological characteristics of callipers

— with analogue indication: vernier scale or circular scale (dial)

— with digital indication: digital display

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 13385. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 13385 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3650:1998, *Geometrical Product Specification (GPS — Length standards — Gauge blocks.*

ISO 14253-1:1999, *Geometrical product specification (GPS) — Inspection by measurement of Workpieces and measuring equipment — Part 1: Decision rules for proving conformance or non-conformance with specifications.*

ISO/TS 14253-2:1999, *Geometrical product specification (GPS) — Inspection by measurement of Workpieces and measuring equipment — Part 2: Guide to the estimation of uncertainty of measurement in calibration of measuring equipment and product verification.*

ISO/DIS 14978:2001, *Geometrical Product Specifications (GPS) — General concepts and requirement for GPS measurement equipment.*

IEC 60529:2001, *Degrees of protection by enclosures (IP code).*

Guide to the expression of uncertainty in measurement (GUM). BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OIML, 1st edition, 1995.

International Vocabulary of Basic and General Terms in Metrology (VIM). BIPM, IFCC, IEC, ISO, IUPAP, OIML, 2nd edition, 1993.

3 Terms and definitions

For the purposes of this part of ISO 13385, the terms and definitions given in ISO 14978, VIM, and the following apply.

3.1
calliper
measuring instrument which measures on the basis of the movement of a slider with a measuring jaw, moving relatively to a measuring scale on a beam and a fixed jaw

See figures 1 and 2.

NOTE 1 Callipers with an additional measuring face at the end of the beam and a depth measuring rod are called universal callipers (see figure 1).

NOTE 2 The indication may be analogue or by a digital display. Regarding data transfer see clause 4.3.2.

NOTE 3 Callipers are suitable for external and internal measurements, universal callipers may be used to make many types of measurement. The slider of a universal calliper may be developed to measure heights or steps (see Annex D).

4 Design characteristics

4.1 General design and nomenclature

The general design and workmanship shall be such that the metrological characteristics of the calliper comply with this standard under all orientation of operation unless otherwise specified by the manufacturer.

Nomenclature see figure 1 and 2.