SLOVENSKI STANDARD
SIST EN ISO 1302:2004

01-maj-2004

Specifikacija geometrijskih veličin izdelka - Označevanje površinskih tekstur v tehniški delavniški dokumentaciji izdelka (ISO 1302:2002)

Geometrical Product Specifications (GPS) - Indication of surface texture in technical product documentation (ISO 1302:2002)

Geometrische Produktspezifikationen (GPS) - Angabe der Oberflächenbeschaffenheit in technischen Produktdokumentationen (ISO 1302:2002)

Spécification géométrique des produits (GPS) - Indication des états de surface dans la documentation technique de produits (ISO 1302:2002)

Ta slovenski standard je istoveten z: **EN ISO 1302:2002**

ICS:

01.110	Tehnična dokumentacija za izdelke	Technical product documentation
17.040.20	Lastnosti površin	Properties of surfaces

SIST EN ISO 1302:2004 **en**

EUROPEAN STANDARD

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English version

Geometrical Product Specifications (GPS) - Indication of surface texture in technical product documentation (ISO 1302:2002)

Spécification géométrique des produits (GPS) - Indication des états de surface dans la documentation technique de produits (ISO 1302:2002)

Geometrische Produktspezifikation (GPS) - Angabe der Oberflächenbeschaffenheit in der technischen Produktdokumentation (ISO 1302:2002)

This European Standard was approved by CEN on 17 January 2002.

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 Management Centre 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 Management Centre has the same status as the official versions.

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

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

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Foreword

This document (ISO 1302:2002) 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 2002, and conflicting national standards shall be withdrawn at the latest by August 2002.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 1302:2002 has been approved by CEN as a European Standard without any modifications.

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

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 (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

Publication	Year	Title	EN	Year
ISO 3098-2	2000	Technical product documentation - Lettering - Part 2: Latin alphabet, numberal and marks	EN ISO 3098-2	2000
ISO 3274	1996	Geometrical product specifications (GPS) - Surface texture: Profile method - Nominal characteristics of contact (stylus) instruments	EN ISO 3274	1997
ISO 4287	1997	Geometrical product specifications (GPS) - Surface texture: Profile method - Terms, definitions and surface texture para meters	EN ISO 4287	1998
ISO 4288	1996	Geometrical product specifications (GPS) - Surface texture: Profile method - Rules and procedures for the assessment of surface texture	EN ISO 4288	1997
ISO 8785	1998	Geometrical product specification (GPS) - Surface imperfections - Terms, definitions and parameters	EN ISO 8785	1999
ISO 11562	1996	Geometrical product specifications (GPS) - Surface texture: Profile method - Metrological characteristics of phase correct filters	EN ISO 11562	1997
ISO 12085	1996	Geometrical product specification (GPS) - Surface texture: Profile method - Motif parameters	EN ISO 12085	1997

ISO 13565-1	1996	Geometrical product specifications (GPS) - Surface texture: Profile method; surfaces having stratified functional proper ties - Part 1: Filtering and general measurement conditions	EN ISO 13565-1	1997
ISO 13565-2	1996	Geometrical product specifications (GPS) - Surface texture: Profile method; surfaces having stratified functional properties - Part 2: Height characterization using the linear material ratio curve	EN ISO 13565-2	1997
ISO 13565-3	1998	Geometrical Product Specifications (GPS) - Surface texture: Profile method; surfaces having stratified functional properties - Part 3: Height characterization using the material probability curve	EN ISO 13565-3	2000
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	EN ISO 14253-1	1998
ISO 14660-1	1999	Geometrical Product Specifications (GPS) - Geometrical features - Part 1: General terms and definitions	EN ISO 14660-1	1999
ISO 81714-1	1999	Design of graphical symbols for use in the technical documentation of products - Part 1: Basic rules	EN ISO/IEC 11714-1	1999

INTERNATIONAL STANDARD

ISO 1302

Fourth edition
2002-02-01

Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation

Spécification géométrique des produits (GPS) — Indication des états de surface dans la documentation technique de produits

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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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 1302 was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

This fourth edition cancels and replaces the third edition (ISO 1302:1992), which has been technically revised.

Annex A forms a normative part of this International Standard. Annexes B, C, D, E, F, G, H, I and J are for information only.

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 link 1 of the chain of standards on roughness, waviness and primary profile.

For more detailed information of the relation of this International Standard to other standards and the GPS matrix model, see annex J.

This edition of ISO 1302 has been developed for use together with the new editions of the surface texture standards issued in 1996 and 1997, which introduce many radical changes compared with the content of the former surface texture standards issued in the 1980s. The changes are so radical that the drawing indications in some instances have a completely new interpretation. Annex H gives detailed information on these changes.

Drawing indications applied on technical drawings according to former editions of this International Standard refer to the rules given in the surface texture standards issued at the time of issue and can only be interpreted according to those surface texture standards. Annex I provides information on former practices.

The drawing indications given in this edition are to be used for the unambiguous reference to the new surface texture standards issued in 1996 and 1997.

Textual indications in this edition of ISO 1302 are under continuous development within ISO/TC 213 and a separate, detailed standard on this issue is under preparation. Consequently, the textual indications given may change in future editions of ISO 1302.

Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation

1 Scope

This International Standard specifies the rules for the indication of surface texture in technical product documentation (e.g. drawings, specifications, contracts, reports) by means of graphical symbols and textual indications.

It is applicable to the indication of requirements for surfaces by means of

a) profile parameters, according to ISO 4287, related to the

- *R*-profile (roughness parameters),
- *W*-profile (waviness parameters), and
- *P*-profile (structural parameters),

b) motif parameters, according to ISO 12085, related to the

- roughness motif, and
- waviness motif,

c) parameters related to the material ratio curve according to ISO 13565-2 and ISO 13565-3.

NOTE For the indication of requirements for surface imperfections (pores, scratches etc.), which cannot be specified using surface texture parameters, reference is made to ISO 8785, which covers surface imperfections.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard 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 129-1:—[1], *Technical drawings — Indication of dimensions and tolerances — Part 1: General principles*

ISO 1101:—[2], *Geometrical Product Specifications (GPS) — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out*

1) To be published. (Revision of ISO 129:1985)

2) To be published. (Revision of ISO 1101:1983)

ISO 3098-2:2000, *Technical product documentation — Lettering — Part 2: Latin alphabet, numerals and marks*

ISO 3274:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Nominal characteristics of contact (stylus) instruments*

ISO 4287:1997, *Geometrical product specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters*

ISO 4288:1996, *Geometrical product specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture*

ISO 8785:1998, *Geometrical product specifications (GPS) — Surface imperfections — Terms, definitions and parameters*

ISO 10135:—[3], *Technical drawings — Simplified representation of moulded, cast and forged parts*

ISO 10209-1:1992, *Technical product documentation — Vocabulary — Part 1: Terms relating to technical drawings: general and types of drawings*

ISO 11562:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Metrological characteristics of phase correct filters*

ISO 12085:1996, *Geometrical product specifications (GPS) — Surface texture: Profile method — Motif parameters*

ISO 13565-1:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method; Surfaces having stratified functional properties — Part 1: Filtering and general measurement conditions*

ISO 13565-2:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method; Surfaces having stratified functional properties — Part 2: Height characterization using the linear material ratio curve*

ISO 13565-3:1998, *Geometrical Product Specifications (GPS) — Surface texture: Profile method; Surfaces having stratified functional properties — Part 3: Height characterization using the material probability curve*

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 specification*

ISO 14660-1:1999, *Geometrical Product Specifications (GPS) — Geometrical features — Part 1: General terms and definitions*

ISO 81714-1:1999, *Design of graphical symbols for use in the technical documentation of products — Part 1: Basic rules*

3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 3274, ISO 4287, ISO 4288, ISO 10209-1, ISO 11562, ISO 12085, ISO 13565-2, ISO 13565-3, ISO 14660-1 and the following apply.

3.1
basic graphical symbol
⟨surface texture⟩ graphical symbol indicating that a requirement for surface texture exists

See Figure 1.

3) To be published. (Revision of ISO 10135:1994)

3.2
expanded graphical symbol
⟨surface texture⟩ expanded basic graphical symbol indicating that material is either to be removed or not removed in order to obtain the specified surface texture

See Figures 2 and 3.

3.3
complete graphical symbol
⟨surface texture⟩ basic or expanded graphical symbol expanded in order to facilitate the addition of complementary surface texture requirements

See Figure 4.

3.4
surface (texture) parameter
parameter expressing a micro-geometrical property of a surface

NOTE See annex E for examples of surface texture parameter designations.

3.5
(surface) parameter symbol
symbol indicating the type of surface texture parameter

NOTE The parameter symbols consist of letters and numerical values (e.g. *Ra*, *Ramax*, *Wz*, *Wz*1*max*, *AR*, *Rpk*, *Rpq*).

4 Graphical symbols for the indication of surface texture

4.1 General

Requirements for surface texture are indicated on technical product documentation by several variants of graphical symbols, each having its own significant meaning. The graphical symbols specified in 4.2 and 4.3 shall be supplemented with complementary surface texture requirements in the form of numerical values, graphical symbols and text (see also clauses 5, 6, 7 and 8). Attention is drawn to the fact that, in particular instances, the graphical symbols may be used alone to convey a special meaning on the technical drawing (see clause 11).

4.2 Basic graphical symbol

The basic graphical symbol shall consist of two straight lines of unequal length inclined at approximately 60° to the line representing the considered surface, as shown in Figure 1. The basic graphical symbol in Figure 1 should not be used alone (without complementary information). Its use shall be to provide collective indications as shown in Figures 23 and 26.

If the basic graphical symbol is used with complementary, supplemental information (see clause 5), then no further decision is required as to whether removal of material is necessary for obtaining the specified surface (see 4.3.1) or whether removal of material is not permitted for obtaining the specified surface (see 4.3.2).

Figure 1 — Basic graphical symbol for surface texture