

**SLOVENSKI STANDARD
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**Specifikacija geometrijskih veličin izdelka (GPS) - Tekstura površine: profil - 2. del:
Izrazi, definicije in parametri teksture površine (ISO 21920-2:2021)**

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Geometrical product specifications (GPS) - Surface texture: Profile - Part 2: Terms,
definitions and surface texture parameters (ISO 21920-2:2021)

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Geometrische Produktspezifikation (GPS) - Oberflächenbeschaffenheit: Profile - Teil 2:
Begriffe und Parameter für die Oberflächenbeschaffenheit (ISO 21920-2:2021)

Spécification géométrique des produits (GPS) - État de surface: Méthode du profil -
Partie 2: Termes, définitions et paramètres d'état de surface (ISO 21920-2:2021)

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17.040.20	Lastnosti površin	Properties of surfaces

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EUROPEAN STANDARD

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January 2022

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EN ISO 13565-2:1997, EN ISO 13565-3:2000, EN ISO
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ISO 12085:1997/AC:2008

English Version

Geometrical product specifications (GPS) - Surface texture: Profile - Part 2: Terms, definitions and surface texture parameters (ISO 21920-2:2021)

Spécification géométrique des produits (GPS) - État de
surface: Méthode du profil - Partie 2: Termes,
définitions et paramètres d'état de surface (ISO 21920-
2:2021)

Geometrische Produktspezifikation (GPS) -
Oberflächenbeschaffenheit: Profile - Teil 2: Begriffe
und Parameter für die Oberflächenbeschaffenheit (ISO
21920-2:2021)

This European Standard was approved by CEN on 27 November 2021.

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Contents	Page
European foreword.....	3

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European foreword

This document (EN ISO 21920-2:2022) 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 July 2022, and conflicting national standards shall be withdrawn at the latest by July 2022.

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

This document supersedes EN ISO 12085:1997, EN ISO 4287:1998, EN ISO 13565-2:1997 and EN ISO 13565-3:2000.

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INTERNATIONAL
STANDARD

ISO
21920-2

First edition
2021-12

**Geometrical product specifications
(GPS) — Surface texture: Profile —**

Part 2:

**Terms, definitions and surface texture
parameters**

*Spécification géométrique des produits (GPS) — État de surface:
Méthode du profil —*

Partie 2: Termes, définitions et paramètres d'état de surface

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
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Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 General terms.....	1
3.2 Geometrical parameter terms.....	10
3.3 Geometrical feature terms.....	14
4 Field parameters	22
4.1 General.....	22
4.2 Height parameters.....	22
4.2.1 General.....	22
4.2.2 Arithmetic mean height.....	22
4.2.3 Root mean square height.....	22
4.2.4 Skewness.....	22
4.2.5 Kurtosis.....	22
4.2.6 Total height.....	23
4.2.7 Maximum height per section.....	23
4.3 Spatial parameters.....	24
4.3.1 General.....	24
4.3.2 Autocorrelation length.....	24
4.3.3 Dominant spatial wavelength.....	24
4.4 Hybrid parameters.....	25
4.4.1 General.....	25
4.4.2 Root mean square gradient.....	25
4.4.3 Arithmetic mean of absolute gradient.....	25
4.4.4 Maximum absolute gradient.....	25
4.4.5 Developed length.....	25
4.4.6 Developed length ratio.....	26
4.5 Material ratio functions and related parameters.....	26
4.5.1 Material ratio functions.....	26
4.5.2 Material ratio parameters.....	31
4.5.3 Parameters for stratified surfaces using the material ratio curve.....	33
4.5.4 Parameters for stratified surfaces using the material probability curve.....	35
4.5.5 Volume parameters.....	36
5 Feature parameters	38
5.1 Parameters based on peak heights and pit depths.....	38
5.1.1 General.....	38
5.1.2 Maximum peak height.....	39
5.1.3 Mean peak height.....	39
5.1.4 Maximum pit depth.....	39
5.1.5 Mean pit depth.....	40
5.1.6 Maximum height.....	40
5.2 Parameters based on profile elements.....	40
5.2.1 General.....	40
5.2.2 Mean profile element spacing.....	42
5.2.3 Maximum profile element spacing.....	42
5.2.4 Standard deviation of profile element spacings.....	42
5.2.5 Mean profile element height.....	42
5.2.6 Maximum profile element height.....	42
5.2.7 Standard deviation of profile element heights.....	42
5.2.8 Peak count parameter.....	43

ISO 21920-2:2021(E)

5.3	Parameters based on feature characterization.....	43
5.3.1	General.....	43
5.3.2	Named feature parameters.....	43
Annex A	(informative) Determination of the first and second derivative	45
Annex B	(informative) Determination of the local curvature.....	48
Annex C	(normative) Determination of the material ratio curve.....	49
Annex D	(normative) Determination of profile parameters for stratified surfaces	50
Annex E	(normative) Crossing-the-line segmentation to determine profile elements.....	59
Annex F	(normative) Feature characterization.....	65
Annex G	(informative) Summary of profile surface texture parameters and functions.....	69
Annex H	(informative) Specification analysis workflow.....	72
Annex I	(informative) Changes to previous ISO profile documents.....	74
Annex J	(informative) Overview of profile and areal standards in the GPS matrix model.....	75
Annex K	(informative) Relation to the GPS matrix model.....	76
Bibliography	77

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<https://standards.iteh.ai/catalog/standards/sist/1dbcaf6b-f925-4f38-861b-0203616cd969/sist-en-iso-21920-2-2022>

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 290, *Dimensional and geometrical product specification and verification*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This first edition of ISO 21920-2 cancels and replaces ISO 4287:1997, ISO 12085:1996, ISO 13565-2:1996 and ISO 13565-3:1998, which have been technically revised.

It also incorporates the Amendment ISO 4287:1997/Amd 1:2009 and the Technical Corrigenda ISO 4287:1997/Cor 1:1998, ISO 4287:1997/Cor 2:2005, ISO 12085:1996/Cor 1:1998 and ISO 13565-2:1996/Cor 1:1998.

The main changes are related to ISO 4287 and are as follows:

- all field parameters are now related to the evaluation length;
- unambiguous evaluation of profile elements;
- definition of new parameters, in particular parameters based on the watershed transformation.

A list of all parts in the ISO 21920 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO 21920-2:2021(E)

Introduction

This document is a geometrical product specification (GPS) standard and is to be regarded as a general GPS standard (see ISO 14638). It influences chain link B of the chains of standards on profile surface texture.

The ISO GPS matrix model given in ISO 14638 gives an overview of the ISO GPS system of which this document is a part. The fundamental rules of ISO GPS given in ISO 8015 apply to this document and the default decision rules given in ISO 14253-1 apply to the specifications made in accordance with this document, unless otherwise indicated.

For more detailed information of the relation of this document to other standards and the GPS matrix model, see [Annex K](#).

This document develops the terminology, concepts and parameters for profile surface texture.

Throughout this document, parameters are written as abbreviated terms with lower-case suffixes (as in R_q) when used in a sentence, and are written as symbols with subscripts (as in R_q) when used in formulae, to avoid misinterpretations of compound letters as an indication of multiplication between quantities in formulae. The parameters with lower-case suffixes are used in product documentation, drawings and data sheets.

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Geometrical product specifications (GPS) — Surface texture: Profile —

Part 2: Terms, definitions and surface texture parameters

1 Scope

This document specifies terms, definitions and parameters for the determination of surface texture by profile methods.

NOTE 1 The main changes to previous ISO profile documents are described in [Annex I](#).

NOTE 2 An overview of profile and areal standards in the GPS matrix model is given in [Annex J](#).

NOTE 3 The relation of this document to the GPS matrix model is given in [Annex K](#).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 16610-1:2015, *Geometrical product specifications (GPS) — Filtration — Part 1: Overview and basic concepts*

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16610-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 General terms

3.1.1

skin model

non-ideal surface model

<of a workpiece> model of the physical interface of the workpiece with its environment

[SOURCE: ISO 17450-1:2011, 3.2.2]

3.1.2

surface texture

geometrical irregularities contained in a scale-limited profile

Note 1 to entry: Surface texture does not include geometrical irregularities contributing to the form or shape of the profile.

ISO 21920-2:2021(E)

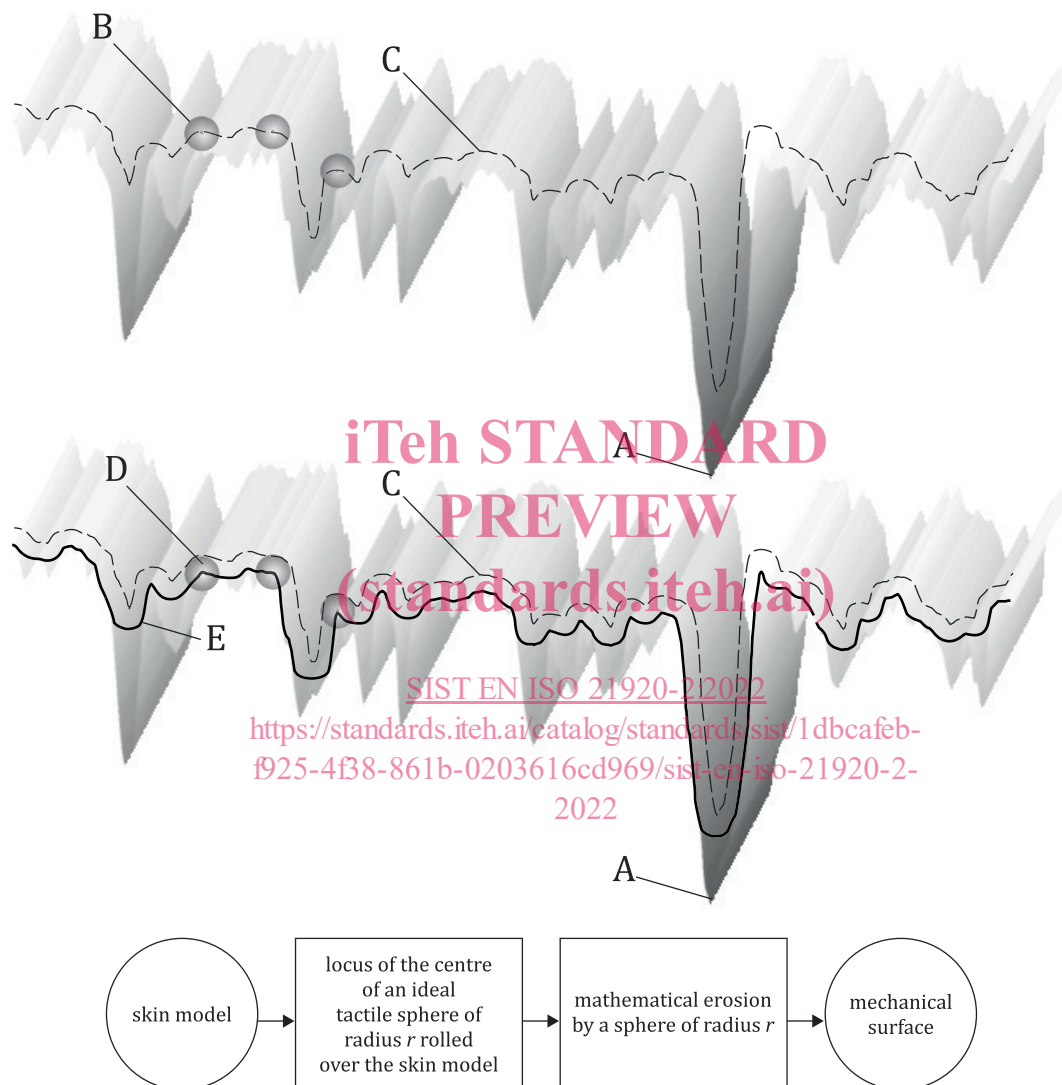
3.1.3

mechanical surface

boundary of the mathematical erosion, by a sphere of radius r , of the locus of the centre of an ideal tactile sphere, also with radius r , rolled over the skin model of a workpiece

Note 1 to entry: [Figure 1](#) is an example to show the effect of mechanical filtering and is not related to a real measured surface.

[SOURCE: ISO 14406:2010, 3.1.1, modified — Notes to entry replaced.]

**Key**

- A skin model
- B ideal tactile sphere of radius r
- C envelope curve of the locus of the centre of an ideal tactile sphere B rolled over the skin model
- D sphere of radius r
- E mechanical surface: boundary of the mathematical erosion, by the sphere D, of the envelope curve C

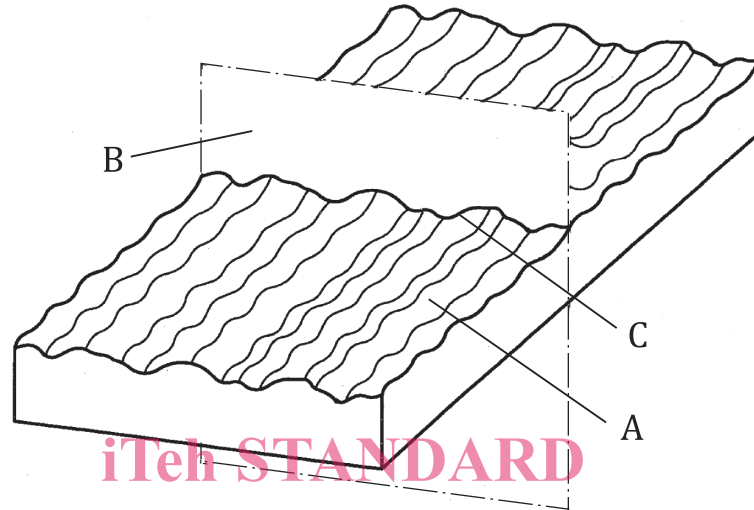
Figure 1 — Mechanical surface

3.1.4 profile trace

intersection of the skin model by an intersection plane perpendicular to the skin model and in a specified direction

Note 1 to entry: See [Figure 2](#).

Note 2 to entry: See ISO 21920-3:2021, 4.3.



Key

- A skin model
- B intersection plane
- C profile trace

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Figure 2 — Profile trace

3.1.5 mechanical profile

boundary of the mathematical erosion, by a circular disc of radius r , of the locus of the centre of an ideal tactile sphere, also with radius r , rolled along a trace over the skin model of a workpiece

Note 1 to entry: [Figure 3](#) is an example to show the effect of mechanical filtering and is not related to a real measured profile.

Note 2 to entry: The treatment of non-measured points and spurious points is part of the extraction process (see ISO 17450-1:2011, 8.1.3) and is not considered in this document.