SLOVENSKI STANDARD
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Specifikacija geometrijskih veličin izdelka (GPS) - Tekstura površine: profil - 3. del: Operatorji specifikacij (ISO/DIS 21920-3:2020)

Geometrical product specifications (GPS) - Surface texture: Profile - Part 3: Specification operators (ISO/DIS 21920-3:2020)

Geometrische Produktspezifikation (GPS) - Oberflächenbeschaffenheit - Teil3: Spezifikationsoperatoren (ISO/DIS 21920-3:2020)

Spécification géométrique des produits (GPS) - État de surface: Méthode du profil - Partie 3: Opérateurs de spécification (ISO/DIS 21920-3:2020)

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

Part 3:
Specification operators

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

Partie 3: Opérateurs de spécification

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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.

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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This edition cancels and replaces the edition of ISO 4288:1996, which has been technically revised.

The main changes compared to the edition of ISO 4288:1996 are as follows:

— no distinction between periodic and non-periodic profiles

— the basic for defaults is the drawing indication

— Tmax rule is the default tolerance acceptance rule

The committee responsible for this document is Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

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

Introduction

This part of ISO 21920 is a geometrical product specification (GPS) standard and is to be regarded as a general GPS standard (see ISO 14638). It influences the chain link C of the chains of standards on profile and areal surface texture.

The ISO/GPS matrix model given in ISO 14638 gives an overview of the ISO/GPS system of which this part of ISO 21920is a part. The fundamental rules of ISO/GPS given in ISO 8015 apply to this part of ISO 21920 and the default decision rules given in ISO 14253-1 apply to the specifications made in accordance with this part of ISO 21920, unless otherwise indicated.

For more detailed information of the relation of this part of ISO 21920 to other standards and the GPS matrix model, see Annex E.

This part of ISO 21920 specifies the specification operators according to ISO 17450-2.

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

Part 3: Specification operators

1 Scope

This part of ISO 21920 specifies the complete specification operator for surface texture (scale limited surfaces) by profile methods.

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 21920-1:2019, *Geometrical product specifications (GPS) — Surface texture: Profile — Part 1: Indication of surface texture*

ISO 21920-2:2019, *Geometrical product specifications (GPS) — Surface texture: Profile — Part 2: Terms, definitions and surface texture parameters*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21920-2 and the following apply.

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

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Setting class

Sc

identifier Sc1, Sc2 … to Sc5 to label the relevant column of table 2 to table 6

Note 1 to entry The setting class is defined by the indication: Either by the specified limit or by an explicitly given setting criterion or by an explicit indication of the setting class, see 4.3.1 to 4.3.6.

4 Complete specification operation

For not explicitly specified criteria (see 21920-1) and often used specification operators default settings are used. Default settings do not control the function of a workpiece in a general way.

The advantage of the default specification operators given in 4.2 and 4.3 is to simplify the drawing indications.

4.1 General

The complete specification operation (see ISO/TS 17450-2) consists of all the operators required for an unambiguous specification. It consists of an ordered full set of unambiguous specification operations in an unambiguous order. For profile surface texture the complete specification operation defines all setting criteria.

Basis for the default settings is the drawing indication, either the specified setting class number (Scn) or the specified profile L-filter nesting index for R- parameters and the specified profile S-filter nesting index for W- parameter respectively. If no specification exists, the parameter of interest is the basis for the default settings.

NOTE 1 There is no distinction between periodic and aperiodic profiles.

NOTE 2 This standard specifies specification operators; “the verification operator is the physical implementation of the specification operator. It may have exactly the same operations in the same order, in which case the method uncertainty is zero, or it may have different operations or perform the operations in a different order, in which case the method uncertainty is not zero.” [ISO 8015]

There is a flowchart in Annex A to show the general way to get the specification operators.

4.2 General default settings

Table 1 gives the general default settings independent of the specified parameter type.

Table 1 — General default settings

Criterion	Default setting
Procedure of profile extraction	Mechanical profile
Profile direction	The direction corresponding to the maximum values of height parameters (perpendicular to the dominant lay direction).
Profile position	Location on that part of the surface on which the maximum values of the specified parameter can be expected (default), or the minimum values of the specified parameter if the lower tolerance limit is specified, see note 1
Tolerance type	Upper tolerance limit
Tolerance acceptance rule	Tmax; all measured values shall be within the specified limit
Profile S-filter type	Gaussian filter according to ISO 16610-21
Profile L-filter type (for R-parameters) Profile S-filter type (for W-parameters)	Gaussian filter according to ISO 16610-21 Exceptionally, the default L-filter for Rk, Rpk, Rvk, RMrk1, RMrk2, Rpq, Rmq, Rvq is the Robust Gaussian filter, second order according to ISO 16610-31, see note 2
F-operator	Removal of the nominal form
F-operator type	Total least square
Only for section based R- and W- parameters:	section length = length of cut off λc; Profile L-filter cut off λc (for R-parameters) or Profile S-filter cut off λc (for W-parameters)

NOTE 1 For the verification this part of the surface can be assessed e.g. by visual inspection. For the verification surface imperfections or surface defects are to be taken into account if not otherwise stated.

NOTE 2 The change of the default filter type of the Rk, Rpk, Rvk, RMrk1, RMrk2, Rpq, Rmq, Rvq parameters leads to a better elimination of large scale components and can generate slightly differing values of these parameters.

