

STN	Geometrické špecifikácie výrobkov (GPS). Charakter povrchu: Plocha. Časť 70: Základné fyzikálne merania (ISO 25178-70: 2014).	STN EN ISO 25178-70 01 4454
------------	--	---

Geometrical product specification (GPS) - Surface texture: Areal - Part 70: Material measures (ISO 25178-70:2014)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Obsahuje: EN ISO 25178-70:2014, ISO 25178-70:2014

119003



Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2014
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy
rozmnžovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

ICS 17.040.20

English Version

**Geometrical product specification (GPS) - Surface texture: Areal
- Part 70: Material measures (ISO 25178-70:2014)**

Spécification géométrique des produits (GPS) - État de
surface: surfacique - Partie 70: Mesures matérialisées (ISO
25178-70:2014)

Geometrische Produktspezifikation (GPS) -
Oberflächenbeschaffenheit: Flächenhaft - Teil 70:
Maßverkörperungen (ISO 25178-70:2014)

This European Standard was approved by CEN on 27 December 2013.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	3

Foreword

This document (EN ISO 25178-70:2014) 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 2014, and conflicting national standards shall be withdrawn at the latest by August 2014.

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

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 25178-70:2014 has been approved by CEN as EN ISO 25178-70:2014 without any modification.

**Geometrical product specification
(GPS) — Surface texture: Areal —**

**Part 70:
Material measures**

*Spécification géométrique des produits (GPS) — État de surface:
surfacique —*

Partie 70: Mesures matérialisées





COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General	2
5 Requirements for the material measures	2
6 Types of material measures	3
7 Profile material measures	4
7.1 Type PPS: Periodic sinusoidal shape	4
7.2 Type PPT: Periodic triangular shape	5
7.3 Type PPR: Periodic rectangular shape	6
7.4 Type PPA: Periodic arcuate shape	6
7.5 Type PGR: Groove, rectangular	7
7.6 Type PGC: Groove, circular	8
7.7 Type PRO: Irregular profile	9
7.8 Type PCR: Circular irregular profile	10
7.9 Type PRI: Prism	11
7.10 Type PRB: Razor blade	11
7.11 Type PAS: Approximated sinusoidal shape	12
7.12 Type PCS: Contour standard	13
7.13 Type PDG: Double groove	14
8 Areal material measures	15
8.1 Type AGP: Grooves, perpendicular	15
8.2 Type AGC: Grooves, circular	15
8.3 Type ASP: Hemisphere	16
8.4 Type APS: Plane-sphere	17
8.5 Type ACG: Cross grating	18
8.6 Type ACS: Cross sinusoidal	19
8.7 Type ARS: Radial sinusoidal	19
8.8 Type ASG: Star-shape grooves	20
8.9 Type AIR: Irregular	21
8.10 Type AFL: Flat plane	22
8.11 Type APC: Photochromic pattern	22
9 Material measure certificate	23
Annex A (normative) Requirements for measurements	24
Annex B (informative) Equivalence table for material measure names	25
Annex C (informative) Evaluation of a spacing measurand on an areal instrument	26
Annex D (informative) Irregular measurement standards	28
Annex E (informative) Relationship to the GPS matrix model	31
Bibliography	33

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

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

ISO 25178 consists of the following parts, under the general title *Geometrical product specification (GPS) — Surface texture: Areal*:

- *Part 1: Areal – Indication of surface texture*
- *Part 2: Areal – Terms, definitions and surface texture parameters*
- *Part 3: Areal – Specification operators*
- *Part 6: Classification of methods for measuring surface texture*
- *Part 70: Material measures*
- *Part 71: Software measurement standards*
- *Part 601: Nominal characteristics of contact (stylus) instruments*
- *Part 602: Nominal characteristics of non-contact (confocal chromatic probe) instruments*
- *Part 603: Nominal characteristics of non-contact (phase-shifting interferometric microscopy) instruments*
- *Part 604: Nominal characteristics of non-contact (coherence scanning interferometry) instruments*
- *Part 605: Nominal characteristics of non-contact (point autofocus probe) instruments*
- *Part 606: Nominal characteristics of non-contact (focus variation) instruments*
- *Part 701: Calibration and measurement standards for contact (stylus) instruments*

The following part is under preparation:

— *Part 72: XML file format x3p*

Introduction

This part of ISO 25178 is a geometrical product specification standard and is to be regarded as a General GPS standard (see ISO/TR 14638). It influences the chain link 6 of the chains of standards on areal surface texture, roughness profile, waviness profile and primary profile.

The ISO GPS Masterplan given in ISO/TR 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. The default decision rules given in ISO 14253-1 apply to specifications made in accordance with this document, unless otherwise stated.

For more detailed information of the relation of this standard to the GPS matrix model, see [Annex E](#).

This part of ISO 25178 introduces material measures that can be used for periodic verification and adjustment of areal surface texture instruments.

Geometrical product specification (GPS) — Surface texture: Areal —

Part 70: Material measures

1 Scope

This part of ISO 25178 specifies the characteristics of material measures used for the periodic verification and adjustment of areal surface texture measurement instruments.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 10012, *Measurement management systems — Requirements for measurement processes and measuring equipment*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

ISO 25178-2, *Geometrical product specifications (GPS) — Surface texture: Areal — Part 2: Terms, definitions and surface texture parameters*

ISO 25178-601, *Geometrical product specifications (GPS) — Surface texture: Areal — Part 601: Nominal characteristics of contact (stylus) instruments*

ISO/IEC Guide 99:2007, *International vocabulary of metrology — Basic and general concepts and associated terms (VIM)*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN