

This is a preview of "ISO 25178-1:2016". [Click here to purchase the full version from the ANSI store.](#)

First edition
2016-04-15

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

Part 1: Indication of surface texture

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

Partie 1: Indication des états de surface



Reference number
ISO 25178-1:2016(E)

© ISO 2016



COPYRIGHT PROTECTED DOCUMENT

© ISO 2016, Published in Switzerland

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
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

This is a preview of "ISO 25178-1:2016". Click here to purchase the full version from the ANSI store.

Contents

	Page
Foreword	iv
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Graphical symbols for the indication of areal surface texture	1
5 Composition of complete graphical symbol for areal surface texture	3
5.1 General.....	3
5.2 Positions of surface texture requirements.....	3
6 Indication of areal surface parameters	4
6.1 Definition of the tolerance.....	4
6.2 Definition of the parameter.....	5
6.3 Indication of manufacturing method or related information.....	5
6.4 Indication of surface lay.....	5
6.5 Indication of machining allowance.....	7
6.6 Position on drawings and other technical product documentation.....	7
6.7 Proportions and dimensions of graphical symbols.....	7
6.8 Orientation of the evaluation area.....	7
7 Coordinate system	7
8 Digital product definition data	8
Annex A (normative) Proportions and dimensions of graphical symbols	9
Annex B (normative) Indications for unambiguous surface texture specifications	11
Annex C (informative) Examples of indications of areal surface texture requirements	15
Annex D (informative) Recommended procedures for indication of intersection planes	19
Annex E (informative) ISO special specification elements for areal surface texture	22
Annex F (informative) Relation to the GPS matrix model	24
Bibliography	25

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

This document was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

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

- *Part 1: Indication of surface texture*
- *Part 2: Terms, definitions and surface texture parameters*
- *Part 3: Specification operators*
- *Part 6: Classification of methods for measuring surface texture*
- *Part 70: Physical measurement standards*
- *Part 71: Software measurement standards*
- *Part 72: XML file format x3p*
- *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 parts are planned:

- *Part 4: Comparison rules*

This is a preview of "ISO 25178-1:2016". [Click here to purchase the full version from the ANSI store.](#)

- *Part 5: Verification operators*
- *Part 600: Metrological characteristics for areal-topography measuring methods* ¹⁾
- *Part 607: Nominal characteristics of non-contact (confocal microscopy) instruments*
- *Part 700: Calibration and verification of metrological characteristics of areal-topography measuring instruments*

1) Part 600 is intended to contain provisions that are in common with the other 600-level parts of ISO 25178. Once Part 600 has been submitted as a Final Draft International Standard, provisions of the other 600-level parts that are then redundant with provisions of Part 600 will be removed from them.

Introduction

This part of the ISO 25178- series standards is a geometrical product specification standard and is to be regarded as a general GPS standard (see ISO 14638). It influences the chain link A of the chains of standards on areal surface texture.

The ISO GPS Masterplan 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. 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 F](#).

This part of ISO 25178 covers the indication of areal surface texture



COPYRIGHT PROTECTED DOCUMENT

© ISO 2016, Published in Switzerland

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
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

This is a preview of "ISO 25178-1:2016". Click here to purchase the full version from the ANSI store.

Contents

	Page
Foreword	iv
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Graphical symbols for the indication of areal surface texture	1
5 Composition of complete graphical symbol for areal surface texture	3
5.1 General.....	3
5.2 Positions of surface texture requirements.....	3
6 Indication of areal surface parameters	4
6.1 Definition of the tolerance.....	4
6.2 Definition of the parameter.....	5
6.3 Indication of manufacturing method or related information.....	5
6.4 Indication of surface lay.....	5
6.5 Indication of machining allowance.....	7
6.6 Position on drawings and other technical product documentation.....	7
6.7 Proportions and dimensions of graphical symbols.....	7
6.8 Orientation of the evaluation area.....	7
7 Coordinate system	7
8 Digital product definition data	8
Annex A (normative) Proportions and dimensions of graphical symbols	9
Annex B (normative) Indications for unambiguous surface texture specifications	11
Annex C (informative) Examples of indications of areal surface texture requirements	15
Annex D (informative) Recommended procedures for indication of intersection planes	19
Annex E (informative) ISO special specification elements for areal surface texture	22
Annex F (informative) Relation to the GPS matrix model	24
Bibliography	25

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

This document was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

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

- *Part 1: Indication of surface texture*
- *Part 2: Terms, definitions and surface texture parameters*
- *Part 3: Specification operators*
- *Part 6: Classification of methods for measuring surface texture*
- *Part 70: Physical measurement standards*
- *Part 71: Software measurement standards*
- *Part 72: XML file format x3p*
- *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 parts are planned:

- *Part 4: Comparison rules*

This is a preview of "ISO 25178-1:2016". [Click here to purchase the full version from the ANSI store.](#)

- *Part 5: Verification operators*
- *Part 600: Metrological characteristics for areal-topography measuring methods* ¹⁾
- *Part 607: Nominal characteristics of non-contact (confocal microscopy) instruments*
- *Part 700: Calibration and verification of metrological characteristics of areal-topography measuring instruments*

1) Part 600 is intended to contain provisions that are in common with the other 600-level parts of ISO 25178. Once Part 600 has been submitted as a Final Draft International Standard, provisions of the other 600-level parts that are then redundant with provisions of Part 600 will be removed from them.

Introduction

This part of the ISO 25178- series standards is a geometrical product specification standard and is to be regarded as a general GPS standard (see ISO 14638). It influences the chain link A of the chains of standards on areal surface texture.

The ISO GPS Masterplan 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. 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 F](#).

This part of ISO 25178 covers the indication of areal surface texture