

**SLOVENSKI STANDARD**  
**oSIST prEN ISO 25178-604:2010**  
**01-september-2010**

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**Specifikacija geometrijskih veličin izdelka - Tekstura površine: ploskovna - 604.  
del: Imenske značilnosti nekontaktnih instrumentov (interferometrija s  
koherentnim optičnim čitalnikom) (ISO/DIS 25178-604:2010)**

Geometrical product specifications (GPS) - Surface texture: Areal - Part 604: Nominal characteristics of non-contact (coherence scanning interferometry) instruments (ISO/DIS 25178-604:2010)

Geometrische Produktspezifikation (GPS) - Oberflächenbeschaffenheit: Flächenhaft - Teil 604: Merkmale von berührungslos messenden Geräten (der Kohärenz-Scannungs-Interferometrie) (ISO/DIS 25178-604:2010)

Spécification géométrique des produits (GPS) - État de surface: Surfacique - Partie 604: Caractéristiques nominales des instruments sans contact (à interférométrie par balayage à cohérence) (ISO/DIS 25178-604:2010)

**Ta slovenski standard je istoveten z: prEN ISO 25178-604**

**ICS:**

17.040.20 Lastnosti površin Properties of surfaces

**oSIST prEN ISO 25178-604:2010 en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
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**DRAFT**  
**prEN ISO 25178-604**

June 2010

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English Version

**Geometrical product specifications (GPS) - Surface texture:  
Areal - Part 604: Nominal characteristics of non-contact  
(coherence scanning interferometry) instruments (ISO/DIS  
25178-604:2010)**

Spécification géométrique des produits (GPS) - État de surface: Surfacique - Partie 604: Caractéristiques nominales des instruments sans contact (à interférométrie par balayage à cohérence) (ISO/DIS 25178-604:2010)

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This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 290.

If this draft becomes a European Standard, 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.

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## Foreword

This document (prEN ISO 25178-604:2010) 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 document is currently submitted to the parallel Enquiry.

### Endorsement notice

The text of ISO/DIS 25178-604:2010 has been approved by CEN as a prEN ISO 25178-604:2010 without any modification.

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# DRAFT INTERNATIONAL STANDARD ISO/DIS 25178-604

ISO/TC 213

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

Part 604:

### Nominal characteristics of non-contact (coherence scanning interferometry) instruments

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

*Partie 604: Caractéristiques nominales des instruments sans contact (à interférométrie par balayage à cohérence)*

ICS 17.040.20

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#### ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO-lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five-month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

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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 2.

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

ISO 25178-604 was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification* and by Technical Committee CEN/TC 290, *Dimensional and geometrical product specification and verification* in collaboration.

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

- Part 1: *Areal Surface Texture Drawing Indication*
- Part 2: *Terms, definitions and surface texture parameters*
- Part 3: *Specification operators*
- Part 4: *Comparison rules*
- Part 5: *Verification operators*
- Part 6: *Classification of methods for measuring surface texture*
- Part 7: *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 701: *Calibration and measurement standards for contact (stylus) instruments*
- Part 702: *Calibration of non-contact (confocal chromatic probe) instruments*
- Part 703: *Calibration and measurement standards for non-contact (interferometric) instruments*

## 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 5 of the chain of standards on areal surface texture.

This part of ISO 25178 describes the metrological characteristics of coherence scanning interferometers, designed for the measurement of surface topography maps.

For more detailed information on the coherence scanning technique, see Annex A and Annex B.

**NOTE** Portions of this document, particularly the informative clauses, describe patented systems and methods. This information is provided only to assist users in understanding the operating principles of coherence scanning interferometry. This document is not intended to establish priority for any intellectual property, nor does it imply a license to proprietary technologies described herein.

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

Part 604:

## Nominal characteristics of non-contact (coherence scanning interferometry) instruments

### 1 Scope

The present standard describes the metrological characteristics of coherence scanning interferometry (CSI) systems for 3D mapping of surface height.

### 2 Normative references

The following referenced document is indispensable for the application 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 25178-6:2010, *Geometrical Product Specifications (GPS) — Surface texture: Areal — Part 6: Classification of methods for measuring surface texture*

### 3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1 General terms

##### 3.1.1

##### **coherence scanning interferometry**

##### **CSI**

measurement method wherein the localization of interference fringes during a scan of optical path length provides a means to determine a surface topography map

[ISO 25178-6:2010]

NOTE 1 CSI encompasses but is not limited to instruments that use spectrally broadband, visible sources (*white light*) to achieve interference fringe localization.

NOTE 2 CSI uses either fringe localization alone or in combination with interference fringe phase, depending on the surface type, desired surface topography repeatability and software capabilities.

NOTE 3 Table 1 compiles alternative terms that conform at least in part to the above definition.