International

ISO 25178-601

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

Part 601: Design and characteristics of contact (stylus) instruments

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

Partie 601: Conception et caractéristiques des instruments à contact (palpeur)

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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 second edition cancels and replaces the first edition (ISO 25178-601:2010), which has been technically revised, and cancels and replaces ISO 3274:1996, whose contents have been revised and incorporated into this document and others, see Annex C for more information.

The main changes are as follows:

— removal of information about the general metrological characteristics for the areal topography measuring method, which are specified in ISO 25178-600;

— removal of the terms and definitions now specified in ISO 25178-600;

— revision of all terms and definitions for clarity and consistency with other ISO standards documents;

— addition of Clause 4 for instrument requirements, which summarizes normative features and characteristics;

— addition of an information flow concept diagram in Clause 4;

— addition of Clause 5 on metrological characteristics;

— addition of Clause 6 on design features, which clarifies the types of instruments relevant to this document;

— revision of Annex A describing the principles of instruments addressed by this document;

— addition of Annex B on the metrological characteristics and influence quantities; replacement of the normative table of influence quantities with an informative description of common error sources and how these relate to the metrological characteristics in ISO 25178-600;

A list of all parts in the ISO 25178 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.

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 F 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 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 on the relation of this document to other standards and the GPS matrix model, see Annex D.

This document includes terms and definitions relevant to contact stylus instruments for the measurement of areal surface topography. Annex A briefly summarizes contact stylus instruments and methods to clarify the definitions and to provide a foundation for Annex B, which describes common sources of uncertainty and their relation to the metrological characteristics of contact stylus instruments.

The stylus instrument for the profile method was previously defined in ISO 3274. Based on this, this document was published in 2010. Since this is the more modern instrument standard and stylus instruments for the profile method and the areal method differ only in the presence of a *y*-axis (drive unit *y*), this edition of this document replaces not only the previous version of ISO 25178-601 but also ISO 3274:1996 (and the Technical Corrigendum of 1998), see Annex C for more details.

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