

Geometrical product specification (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters

ICS 01.040.17; 17.040.20

National foreword

This British Standard is the UK implementation of EN ISO 4287:1998+A1:2009. It is identical to ISO 4287:1997, incorporating amendment 1:2009 and corrigenda June 1998 and February 2005. It supersedes BS EN ISO 4287:1998 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee TDW/4, Technical product realization (TPR).

A list of organizations represented on this committee can be obtained on request to its secretary.

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English version

Geometrical product specifications (GPS) - Surface texture:
Profile method - Terms, definitions and surface texture
parameters (ISO 4287:1997)

Spécification géométrique des produits (GPS) - Etat de
surface: Méthode du profil - Termes, définitions et
paramètres d'état de surface (ISO 4287:1997)

Geometrische Produktspezifikationen (GPS) -
Oberflächenbeschaffenheit: Tastschnittverfahren -
Benennungen, Definitionen und Kenngrößen der
Oberflächenbeschaffenheit (ISO 4287:1997)

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Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of the International Standard from Technical Committee ISO/TC 213 "Dimensional and geometrical product specifications and verification" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 290 "Dimensional and geometrical product specification and verification", the secretariat of which is held by DIN.

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Endorsement notice

The text of the International Standard ISO 4287:1997 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

Foreword to amendment A1

This document (EN ISO 4287:1998/A1:2009) 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.

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Endorsement notice

The text of ISO 4287:1997/Amd 1:2009 has been approved by CEN as a EN ISO 4287:1998/A1:2009 without any modification.

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Introduction

This International Standard is a Geometrical Product Specification (GPS) standard and is to be regarded as a General GPS standard (see ISO/TR 14638). It influences chain link 2 of the chains of standards on surface texture.

For more detailed information on the relationship of this International Standard to other standards and the GPS matrix model, see annex E.

Historically, the roughness profile and its parameters have been the only parts of surface texture characterization that have been well defined.

A default relationship between λ_c and λ_f is under consideration.

Introduction

La présente Norme internationale qui traite de la spécification géométrique des produits (GPS), est considérée comme une norme GPS générale (voir l'ISO/TR 14638). Elle influence le maillon 2 des chaînes de normes relatives à l'état de surface.

Pour de plus amples informations sur la relation de la présente Norme internationale avec les autres normes et la matrice GPS, voir l'annexe D.

Par le passé, le profil de rugosité et ses paramètres ont été les seuls éléments caractéristiques de l'état de surface à être correctement définis.

Une relation par défaut entre λ_c et λ_f est en cours d'étude.

Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters

1 Scope

This International Standard specifies terms, definitions and parameters for the determination of surface texture (roughness, waviness and primary profile) by profiling methods.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

ISO 4288:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture*.

ISO 11562:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Metrological characterization of phase correct filters*.

Spécification géométrique des produits (GPS) — État de surface: Méthode du profil — Termes, définitions et paramètres d'état de surface

1 Domaine d'application

La présente Norme internationale prescrit les termes, définitions et paramètres pour la détermination de l'état de surface (profils de rugosité, d'ondulation et profil primaire) par les méthodes de profil.

2 Références normatives

Les normes suivantes contiennent des dispositions qui, par suite de la référence qui en est faite, constituent des dispositions valables pour la présente Norme internationale. Au moment de la publication, les éditions indiquées étaient en vigueur. Toute norme est sujette à révision et les parties prenantes des accords fondés sur la présente Norme internationale sont invitées à rechercher la possibilité d'appliquer les éditions les plus récentes des normes indiquées ci-après. Les membres de la CEI et de l'ISO possèdent le registre des Normes internationales en vigueur à un moment donné.

ISO 3274:1996, *Spécification géométrique des produits (GPS) — État de surface: Méthode du profil — Caractéristiques nominales des instruments à contact (palpeur)*.

ISO 4288:1996, *Spécification géométrique des produits (GPS) — État de surface: Méthode du profil — Règles et procédures pour l'évaluation de l'état de surface*.

ISO 11562:1996, *Spécification géométrique des produits (GPS) — État de surface: Méthode du profil — Caractéristiques métrologiques des filtres à phase correcte*.

3 Terms and definitions

3.1 General terms

3.1.1 profile filter

filter which separates profiles into longwave and shortwave components [ISO 11562]

NOTE — There are three filters used in instruments for measuring roughness, waviness and primary profiles (see figure 1). They all have the same transmission characteristics, defined in ISO 11562, but different cut-off wavelengths.

3.1.1.1 λ_s profile filter

filter which defines the intersection between the roughness and the even shorter wave components present in a surface (see figure 1)

3.1.1.2 λ_c profile filter

filter which defines the intersection between the roughness and waviness components (see figure 1)

3.1.1.3 λ_f profile filter

filter which defines the intersection between the waviness and the even longer wave components present in a surface (see figure 1)

3 Termes et définitions

3.1 Définitions générales

3.1.1 filtre de profil

filtre qui sépare le profil en composantes de longueur d'onde longue et composantes de longueur d'onde courte [ISO 11562]

NOTE — Trois filtres sont utilisés dans les instruments de mesure des profils de rugosité, d'ondulation et du profil primaire (voir la figure 1). Ils ont tous les mêmes caractéristiques de transmission, définies dans l'ISO 11562, mais des longueurs d'onde de coupure différentes.

3.1.1.1 filtre de profil λ_s

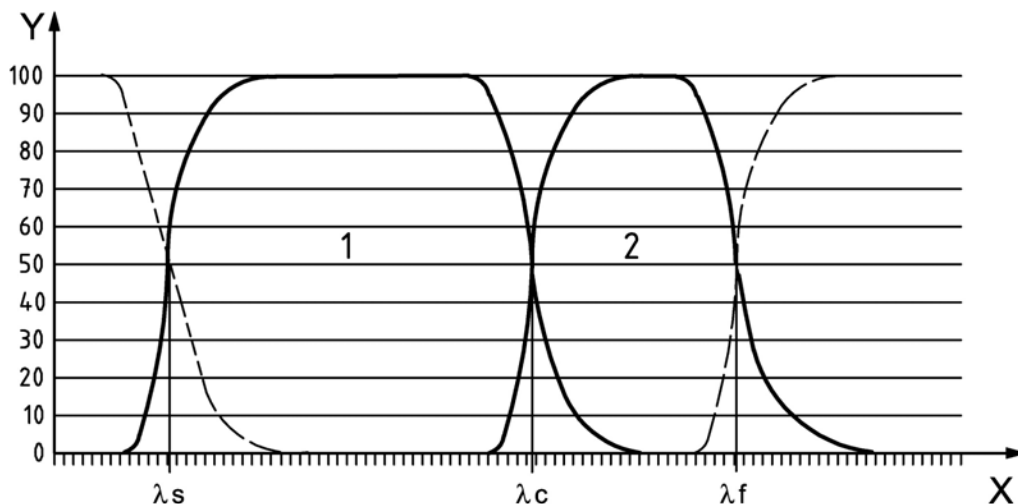
filtre qui définit la séparation entre les composantes de rugosité et les composantes d'onde encore plus courtes présentes à la surface (voir la figure 1)

3.1.1.2 filtre de profil λ_c

filtre qui définit la séparation entre les composantes de rugosité et les composantes d'ondulation (voir la figure 1)

3.1.1.3 filtre de profil λ_f

filtre qui définit la séparation entre les composantes d'ondulation et les composantes d'onde encore plus longues présentes à la surface (voir la figure 1)



Key

- 1 roughness profile
- 2 waviness profile
- X Wavelength.
- Y Transmission, %.

Légende

- 1 profil de rugosité
- 2 profil d'ondulation
- X Longueur d'onde.
- Y Transmission, %.

NOTE The cut-offs are not drawn to scale.

NOTE Les longueurs d'onde de coupure ne sont pas dessinées à l'échelle.

Figure 1 — Transmission characteristics of roughness and waviness profiles

Figure 1 — Caractéristiques de transmission des profils de rugosité et d'ondulation