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STANDARD

**13565-1**

First edition  
1996-12-01

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**Geometrical Product Specifications (GPS)  
— Surface texture: Profile method;  
Surfaces having stratified functional  
properties —**

**Part 1:**  
Filtering and general measurement conditions

*Spécification géométrique des produits (GPS) — État de surface: Méthode du profil; surfaces ayant des propriétés fonctionnelles différentes suivant les niveaux —*

*Partie 1: Filtrage et conditions générales de mesurage*

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Reference number  
ISO 13565:1996(E)

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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.

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.

International Standard ISO 13565-1 was prepared jointly by Technical Committees ISO/TC 57, *Metrology and properties of surfaces*, Subcommittee SC 1, *Geometrical parameters — Instruments and procedures for measurement of surface roughness and waviness*, ISO/TC 3, *Limits and fits*, and ISO/TC 10, *Technical drawings, product definition and related documentation*, Subcommittee SC 5, *Dimensioning and tolerancing*.

ISO 13565 consists of the following parts, under the general title *Geometrical product specifications (GPS) — Surface texture: Profile method; Surfaces having stratified functional properties*:

- *Part 1: Filtering and general measurement conditions*
- *Part 2: Height characterization using the linear material ratio curve*
- *Part 3: Height characterization using the material probability curve*

Annexes A and B of this part of ISO 13565 are for information only.

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International Organization for Standardization  
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

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## Introduction

This part of ISO 13565 is a Geometrical Product Specification (GPS) standard and is to be regarded as a *General GPS standard* (see ISO/TR 14638). It influences chain links 2 and 3 of the chain of standards for roughness profile.

For more detailed information of the relation of this standard to other standards and the GPS matrix model, see annex A.

The roughness profile generated using the filter defined in ISO 11562 suffers some undesirable distortions, when the measured surface consists of relatively deep valleys beneath a more finely finished plateau with minimal waviness. This type of surface is very common, for example in cylinder liners for internal combustion engines.

This part of ISO 13565 provides a method of greatly reducing these distortions, thus enabling the parameters defined in ISO 13565-2 and ISO 13565-3 to be used for evaluating the above mentioned type of surface, with minimal influence from these distortions.

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# **Geometrical Product Specification (GPS) — Surface texture: Profile method; Surfaces having stratified functional properties —**

## **Part 1:**

Filtering and general measurement conditions

### **1 Scope**

This part of ISO 13565 describes a filtering method for use with surfaces that have deep valleys below a more finely finished plateau with a relatively small amount of waviness. The reference line resulting from filtering according to ISO 11562 for such surfaces is undesirably influenced by the presence of the valleys. The filtering approach described in this standard suppresses the valley influence on the reference line such that a more satisfactory reference line is generated.

### **2 Normative references**

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 13565. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 13565 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 4287:1996, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters.*

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

### **3 Definitions**

For the purposes of this part of ISO 13565, the definitions given in ISO 3274 and ISO 4287 apply.