SLOVENSKI STANDARD
SIST EN ISO 11562:2000

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Geometrical product specifications (GPS) - Surface texture: Profile method - Metrological characteristics of phase correct filters (ISO 11562:1996)

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Geometrische Produktspezifikationen (GPS) - Oberflächenbeschaffenheit: Tastschnittverfahren - Meßtechnische Eigenschaften von phasenkorrekten Filtern (ISO 11562:1996)

Spécification géométrique des produits (GPS) - Etat de surface: Méthode du profil - Caractéristiques métrologiques des filtres a phase correcte (ISO 11562:1996)

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17.040.20 Lastnosti površin Properties of surfaces

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This European Standard was approved by CEN on 2 November 1997.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

The text of the International Standard from Technical Committee ISO/TC 57 "Metrology and properties of surfaces" 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.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 1998, and conflicting national standards shall be withdrawn at the latest by June 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 11562:1996 has been approved by CEN as a European Standard without any modification.

INTERNATIONAL
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Geometrical Product Specifications (GPS) — Surface texture: Profile method — Metrological characteristics of phase correct filters

Spécification géométrique des produits (GPS) — État de surface: Méthode du profil — Caractéristiques métrologiques des filtres à phase correcte

Reference number
ISO 11562:1996(E)

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 11562 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*.

Annexes A, B and C of this International Standard are for information only.

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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 links 2 and 3 of the chains of standards for roughness profile and waviness profile and chain link 2 of the chain of standards for primary profile and is envisaged also to cover roundness and other form characteristics.

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

For digital instruments, the appropriate filter for surface profile information is a phase correct filter. The chosen weighting function, for the phase correct filter, is Gaussian with a 50 % transmission at the cut-off wavelength. This provides a transmission characteristic with a relatively sharp cut-off.

It is of importance that the transmission for the cut-off wavelength is 50 % since the short wave and long wave portions of the surface profile are separated and can be recombined without altering the surface profile.

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Geometrical Product Specifications (GPS) — Surface texture: Profile method — Metrological characteristics of phase correct filters

1 Scope

This International Standard specifies the metrological characteristics of phase correct filters for the measurement of surface pofiles.

In particular it specifies how to separate the long and short wave content of a surface profile.

2 Definitions

For the purposes of this International Standard, the following definitions apply.

2.1 profile filter: Filter which serapates profiles into longwave and shortwave components.

2.1.1 phase correct profile filter: Profile filter which does not cause phase shifts which lead to asymmetrical profile distortions.

2.2 phase correct filter mean line (mean line): Long wave profile component which is determined for any point of the profile by a weighted mean value derived from adjacent points.

2.3 transmission characteristic of a filter: Characteristic which indicates the amount by which the amplitude of a sinusoidal profile is attenuated as a function of its wavelength.

2.4 weighting function: Function for calculating the mean line which indicates for each point the weight attached by the profile in the neighbourhood of that point.

NOTE — The transmission characteristic of the mean line is the Fourier transformation of the weighting function.

2.5 cut-off wavelength of the phase correct filter: Wavelength of a sinusoidal profile of which 50 % of the amplitude is transmitted by the profile filter.

NOTE — Profile filters are identified by their cut-off wavelength value.