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Geometrical product specifications (GPS) - Filtration -
Part 21: Linear profile filters: Gaussian filters (ISO
16610-21:2025)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN ISO 16610-21:2025 sisaldab Euroopa standardi EN ISO 16610-21:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.02.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN ISO 16610-21:2025 consists of the English text of the European standard EN ISO 16610-21:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 12.02.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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ICS 17.040.20, 17.040.40

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EUROPEAN STANDARD

EN ISO 16610-21

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2025

ICS 17.040.20; 17.040.40

Supersedes EN ISO 16610-21:2012

English Version

**Geometrical product specifications (GPS) - Filtration - Part
21: Linear profile filters: Gaussian filters (ISO 16610-
21:2025)**

Spécification géométrique des produits (GPS) - Filtrage
- Partie 21: Filtres de profil linéaires: Filtres gaussiens
(ISO 16610-21:2025)

Geometrische Produktspezifikation (GPS) - Filterung -
Teil 21: Lineare Profilfilter: Gauß-Filter (ISO 16610-
21:2025)

This European Standard was approved by CEN on 11 February 2025.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 16610-21:2025) 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 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 August 2025, and conflicting national standards shall be withdrawn at the latest by August 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 16610-21:2012.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 16610-21:2025 has been approved by CEN as EN ISO 16610-21:2025 without any modification.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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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 16610-21:2011), which has been technically revised.

The main changes are as follows:

- providing implementation details for open and closed profiles,
- providing the treatment of end effects.

A list of all parts in the ISO 16610 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.

Introduction

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 links C and E in the GPS matrix structure.

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 information on the relationship of this document to the filtration matrix model, see [Annex C](#).

For more detailed information on the relation of this document to other standards and the GPS matrix model, see [Annex D](#).

This document develops the terminology and concepts of linear Gaussian filters for surface profiles. Linear Gaussian filters for surface profiles have a transmission of 50 % for sinusoidal surface profiles with wavelengths equal to the cut-off wavelength. It separates the large- and small-scale lateral components of surface profiles in such a way that the surface profiles can be reconstructed without altering.

Geometrical product specifications (GPS) — Filtration —

Part 21: Linear profile filters: Gaussian filters

1 Scope

This document specifies linear Gaussian filters for the filtration of surface profiles. It defines, in particular, how to separate large- and small-scale lateral components of surface profiles.

The concept presented for closed profiles are applicable to the case of roundness filtration. Where appropriate, these concept can be extended to generalized closed profiles, especially for surface profiles with re-entrant features.

Implementation details are given in [Annex A](#) for open profiles and [Annex B](#) for closed profiles.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 16610-1, *Geometrical product specifications (GPS) — Filtration — Part 1: Overview and basic concepts*

ISO 16610-20, *Geometrical product specifications (GPS) — Filtration — Part 20: Linear profile filters: Basic concepts*

ISO/IEC Guide 99, *International vocabulary of metrology — Basic and general concepts and associated terms (VIM)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16610-1, ISO 16610-20, ISO/IEC Guide 99 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

surface profile

line resulting from the intersection between a surface portion and an ideal plane

Note 1 to entry: The orientation of the ideal plane is usually perpendicular to the tangent plane of the surface portion.

Note 2 to entry: See ISO 17450-1:2011, 3.3 and 3.3.1, for the definition of an ideal plane.

[SOURCE: ISO 16610-1:2015, 3.1.2, modified — Note 2 to entry replaced.]