



BSI Standards Publication

Geometrical product specification (GPS) – Filtration

Part 61: Linear areal filters – Gaussian filters

National foreword

This British Standard is the UK implementation of EN ISO 16610-61:2015+A1:2020. It is identical to ISO 16610-61:2015, incorporating amendment 1:2019. It supersedes [BS EN ISO 16610-61:2015](#), which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment 1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee TPR/1, Technical Product Realization.

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

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© The British Standards Institution 2020
Published by BSI Standards Limited 2020

ISBN 978 0 539 13249 6

ICS 17.040.20; 17.040.40

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2015.

Amendments/corrigenda issued since publication

Date	Text affected
31 January 2020	Implementation of ISO amendment 1:2019 with CEN endorsement A1:2020
31 March 2020	Implementation of CEN correction notice 19 February 2020: DOW corrected

English Version

Geometrical product specification (GPS) — Filtration —
Part 61: Linear areal filters — Gaussian filters (ISO
16610-61:2015)

Spécification géométrique des produits (GPS) —
Filtrage — Partie 61: Filtres surfaciques linéaires:
Filtres Gaussiens (ISO 16610-61:2015)

Geometrische Produktspezifikation (GPS) —
Filterung — Teil 61: Lineare Flächenfilter:
Gauß-Filter (ISO 16610-61:2015)

This European Standard was approved by CEN on 21 February 2015.

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European foreword

The text of (EN ISO 16610-61:2015) 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of an identical text or by endorsement, at the latest by January 2016, and conflicting national standards shall be withdrawn at the latest by January 2016.

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Endorsement notice

The text of ISO 16610-61:2015 has been approved by CEN as EN ISO 16610-61:2015 without any modification.

Foreword to amendment A1

This document (EN ISO 16610-61:2015/A1:2020) 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 16610-61:2015/Amd 1:2019 has been approved by CEN as EN ISO 16610-61:2015/A1:2020 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 documents 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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

ISO 16610 consists of the following parts, under the general title *Geometrical product specifications (GPS) — Filtration*:

- *Part 1: Overview and basic concepts*
- *Part 20: Linear profile filters: Basic concepts*
- *Part 21: Linear profile filters: Gaussian filters*
- *Part 22: Linear profile filters: Spline filters*
- *Part 28: Profile filters: End effects*
- *Part 29: Linear profile filters: Spline wavelets*
- *Part 30: Robust profile filters: Basic concepts*
- *Part 31: Robust profile filters: Gaussian regression filters*
- *Part 32: Robust profile filters: Spline filters*
- *Part 40: Morphological profile filters: Basic concepts*
- *Part 41: Morphological profile filters: Disk and horizontal line-segment filters*
- *Part 49: Morphological profile filters: Scale space techniques*
- *Part 60: Linear areal filters: Basic concepts*
- *Part 61: Linear areal filters: Gaussian filters*
- *Part 71: Robust areal filters: Gaussian regression filters*

— *Part 85: Morphological areal filters: Segmentation*

The following parts are planned:

- *Part 26: Linear profile filters: Filtration on nominally orthogonal grid planar data sets*
- *Part 27: Linear profile filters: Filtration on nominally orthogonal grid cylindrical data sets*
- *Part 45: Morphological profile filters: Segmentation*
- *Part 62: Linear areal filters: Spline filters*
- *Part 69: Linear areal filters: Spline wavelets*
- *Part 70: Robust areal filters: Basic concepts*
- *Part 72: Robust areal filters: Spline filters*
- *Part 80: Morphological areal filters: Basic concepts*
- *Part 81: Morphological areal filters: Sphere and horizontal planar segment filters*
- *Part 89: Morphological areal filters: Scale space techniques*

Introduction

This part of ISO 16610 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 3 and 5 in the GPS matrix structure..

The ISO/GPS Masterplan given in ISO/TR 14638 gives an overview of the ISO/GPS system of which this part of ISO 16610 is a part. The fundamental rules of ISO/GPS given in [ISO 8015](#) apply to this part of ISO 16610 and the default decision rules given in [ISO 14253-1](#) apply to specifications made in accordance with this part of ISO 16610, unless otherwise indicated.

For more detailed information about the relation of this part of ISO 16610 to the GPS matrix model, see [Annex D](#).

This part of ISO 16610 specifies the metrological characteristics of linear areal Gaussian filters for the rotationally symmetric filtration of nominal planar surfaces and the filtration of nominal cylindrical surfaces. It specifies, in particular, how to separate long and short wave components of a surface.

Geometrical product specification (GPS) – Filtration —

Part 61:

Linear areal filters – Gaussian filters

1 Scope

This part of ISO 16610 specifies linear areal Gaussian filters for the rotationally symmetric filtration of nominal planar surfaces and the filtration of nominal cylindrical surfaces. It specifies, in particular, how to separate long and short wave components of a surface.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 specification (GPS) — Filtration — Part 1: Overview and basic terminology*

[ISO 16610-20](#), *Geometrical product specification (GPS) — Filtration — Part 20: Linear profile filters: basic concepts*

[ISO 16610-21:2011](#), *Geometrical product specifications (GPS) — Filtration — Part 21: Linear profile filters: Gaussian filters*

[ISO 16610-60](#), *Geometrical product specification (GPS) — Filtration — Part 60: Linear areal filters: Basic concepts*

ISO/IEC Guide 99:2007, *International vocabulary of metrology — Basic and general concepts and associated terms (VIM)*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in [ISO 16610-1](#), [ISO 16610-20](#), [ISO 16610-21](#), [ISO 16610-60](#), ISO/IEC Guide 98-3:2008, ISO/IEC Guide 99, and the following apply.

3.1

linear areal filter

areal filter which separates surfaces into long wave and short wave components and is also a linear function

[SOURCE: ISO 16610-60, 3.1]

3.1.1

linear planar filter

linear areal filter ([3.1](#)) that separate surfaces into long wave and short wave components, which applies to nominal planar surfaces

[SOURCE: ISO 16610-60, 3.1.1]