

ICS 17.040.01

English Version

**Geometrical product specifications (GPS) - Straightness - Part
1: Vocabulary and parameters of straightness (ISO/TS 12780-
1:2003)**

Spécification géométrique des produits (GPS) - Rectitude -
Partie 1: Vocabulaire et paramètres de rectitude (ISO/TS
12780-1:2003)

Geometrische Produktspezifikation (GPS) - Geradheit - Teil
1: Begriffe und Kenngrößen der Geradheit (ISO/TS 12780-
1:2003)

This Technical Specification (CEN/TS) was approved by CEN on 8 October 2007 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of ISO/TS 12780-1:2003 has been prepared by Technical Committee ISO/TC 213 "Dimensional and geometrical product specifications and verification" of the International Organization for Standardization (ISO) and has been taken over as CEN ISO/TS 12780-1:2007 by Technical Committee CEN/TC 290 "Dimensional and geometrical product specification and verification" the secretariat of which is held by AFNOR.

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

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

Endorsement notice

The text of ISO/TS 12780-1:2003 has been approved by CEN as a CEN ISO/TS 12780-1:2007 without any modification.

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 General terms	1
3.2 Terms relating to profiles	2
3.3 Terms relating to the reference line	3
3.4 Terms relating to the filter function	4
3.5 Parameters	5
Annex A (informative) Mathematical definition of straightness tolerances of nominal integral features	6
Annex B (informative) Synoptic tables of terms, abbreviations and parameters	7
Annex C (informative) Relation to the GPS matrix model	9
Bibliography	11

Introduction

This part of ISO/TS 12780 is a geometrical product specification (GPS) Technical Specification and is to be regarded as a general GPS document (see ISO/TR 14638). It influences chain link 2 of the chain of standards on form of line independent of datum.

For more detailed information of the relation of this part of ISO/TS 12780 to other standards and the GPS matrix model, see Annex C.

This part of ISO/TS 12780 defines terms and concepts necessary for defining the specification operators according to ISO/TS 17450-2 for straightness of integral features.

Extracting data will always involve applying a certain filtering process. An additional filtering of the extracted data may or may not be applied. This additional filter can be a mean line filter (Gaussian, spline, wavelet, etc.) or a non-linear filter (e.g. morphological filter). The type of filtering will influence the definition of straightness and the specification operators and, therefore, needs to be stated unambiguously.

This part of ISO/TS 12780 is not intended to disallow any means of measuring straightness.

Geometrical Product Specifications (GPS) — Straightness —

Part 1: Vocabulary and parameters of straightness

1 Scope

This part of ISO/TS 12780 defines the terms and concepts related to straightness of individual integral features and covers complete straightness profiles only.

NOTE Straightness of an extracted derived axis of a cylinder is defined in ISO/TS 12180-1 and ISO/TS 12180-2.

2 Normative references

The following referenced documents are indispensable for the application 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/TS 12780-2:2003, *Geometrical Product Specifications (GPS) — Straightness — Part 2: Specification operators*

ISO 14660-1:1999, *Geometrical Product Specifications (GPS) — Geometrical features — Part 1: General terms and definitions*

ISO 14660-2:1999, *Geometrical Product Specifications (GPS) — Geometrical features — Part 2: Extracted median line of a cylinder and a cone, extracted median surface, local size of an extracted feature*

ISO/TS 17450-1:—¹⁾, *Geometrical Product Specifications (GPS) — General concepts — Part 1: Model for geometrical specification and verification*

3 Terms and definitions

For the purposes of this part of ISO/TS 12780, the terms and definitions given in ISO 14660-1, ISO 14660-2, ISO/TS 17450-1 and the following apply.

3.1 General terms

3.1.1

straightness

property of a straight line

1) To be published.