
**Geometrical product specifications
(GPS) — Surface texture: Profile
method — Flowchart for *PSm*, *RSm*,
WSm and *Pc*, *Rc*, *Wc***

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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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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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*.

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

Feature characterization of rough surfaces is of growing interest in terms of a function-oriented description of technical surfaces. A well-known set of feature parameters is the mean width and mean height of profile elements defined in ISO 4287. Unfortunately, the definition given in ISO 4287 is insufficient for an unambiguous implementation in a high-level programming language. Due to the lack of a flowchart, results given by different software packages are not comparable. The main intention of this document is to provide an unambiguous algorithm for feature parameters PSm , RSm , WSm and Pc , Rc , Wc according to ISO 4287.

The flowchart defined in this document was developed by Seewig and Scott^[5] and represents an extension of crossing the line segmentation proposed by Scott^[4]. The flowchart is based on new knowledge gathered over the past 10 years.

Geometrical product specifications (GPS) — Surface texture: Profile method — Flowchart for PSm , RSm , WSm and Pc , Rc , Wc

1 Scope

This document provides an unambiguous calculation of parameters PSm , RSm , WSm and Pc , Rc , Wc , as defined in ISO 4287, by means of a flowchart.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1 General terms

3.1.1 profile

set of ordered pairs (x, z) which describe the intersection of a surface with a specified plane

Note 1 to entry: For every point x on the X -axis, there is exactly one ordinate z . The relation between x and z is given by a formula $z = f(x)$.

Note 2 to entry: Usually profiles have value pairs (x, z) above and below the X -axis.

Note 3 to entry: In surface metrology three profiles are defined. The primary profile, the roughness profile and the waviness profile. Each profile corresponds to a specific lateral scale.

3.1.2 evaluation length

l_m

length in the direction of the X -axis used for assessing the profile under evaluation

[SOURCE: ISO 4287:1997, 3.1.10, modified — symbol changed from l_n and notes to entry removed.]

3.1.3 profile peak

outwardly directed (from material to surrounding medium) portion of the assessed profile connecting two adjacent intersection points of the profile and the X -axis

3.1.4 profile peak height

normal distance between the X -axis and the highest ordinate of the profile peak