Measurement of roughness average Ra and peak count RPc on metallic flat products

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 10049:2005 sisaldab Euroopa standardi EN 10049:2005 ingliskeelset teksti. Käesolev dokument on jõustatud 28.12.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 10049:2005 consists of the English text of the European standard EN 10049:2005. This document is endorsed on 28.12.2005 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard defines the measurement conditions for surface roughness parameters of metallic flat products, both uncoated (cold and hot rolled pickled steel) and coated with metallic coatings (e.g. zinc, aluminium, tin, chromium) [see subclause 3.1].	**Scope:** This European Standard defines the measurement conditions for surface roughness parameters of metallic flat products, both uncoated (cold and hot rolled pickled steel) and coated with metallic coatings (e.g. zinc, aluminium, tin, chromium) [see subclause 3.1].

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Võtmesõnad:

EUROPEAN STANDARD

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English Version

Measurement of roughness average Ra and peak count RPc on metallic flat products

Mesure de la rugosité moyenne Ra et du nombre de pics RPc sur les produits plats métalliques

Messung des arithmetischen Mittenrauwertes Ra und der Spitzenzahl RPc an metallischen Flacherzeugnissen

This European Standard was approved by CEN on 30 September 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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.

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

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Foreword

This European Standard (EN 10049:2005) has been prepared by Technical Committee ECISS/TC 13 “Flat products for cold working - Qualities, dimensions, tolerances and specific tests”, the secretariat of which is held by IBN.

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 May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

The European Committee for Iron and Steel Standardization (ECISS) had charged the Technical Committee 13 (Secretariat Belgium) with preparing a European Standard on the measuring of roughness as a revision of Euronorm 49.

The reason for the existence of this European Standard is that general roughness measurement rules as described in ISO standards (see Clause 2) are not practical for metallic flat products for the following reasons:

- the practical use of EN ISO 4288 is not convenient for flat products, because the choice of the cut-off (λc) is dependent on the *Ra* to be measured; the product range is quite wide and the transition point for *Ra* is 2 μm in EN ISO 4288 (EN ISO stipulates a cut-off (λc) of 0,8 mm for *Ra* < 2μm and a cut-off (λc) of 2,5 mm for *Ra* > 2μm);

- in the automotive industry, the use of a cut-off (λc) of 2,5 mm is based on requirements related to paint appearance.

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

1 Scope

This European Standard defines the measurement conditions for surface roughness parameters of metallic flat products, both uncoated (cold and hot rolled pickled steel) and coated with metallic coatings (e.g. zinc, aluminium, tin, chromium) [see subclause 3.1].

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.

EN ISO 3274, *Geometrical product specifications (GPS) - Surface texture: Profile method - Nominal characteristics of contact (stylus) instruments (ISO 3274:1996)*

EN ISO 5436-1, *Geometrical Product Specifications (GPS) - Surface texture: Profile method; Measurement standards - Part 1: Material measures (ISO 5436-1:2000)*

EN ISO 11562:1997, Geometrical product specifications (GPS) - Surface texture: Profile method - Metrological characteristics of phase correct filters (ISO 11562:1996)

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply.

3.1
application group products

3.1.1
application group 1 product
metallic flat product mainly used in the automotive industry, uncoated or coated with metallic coatings (e.g. zinc, aluminium)

3.1.2
application group 2 product
metallic flat product mainly used for applications other than those of the automotive industry (e.g. tinplate or chromium coated steel for packaging, uncoated or coated cold rolled steel, pickled hot rolled steel)

3.2
surface profile
profile that results from the intersection of the real surface by a specified plane

NOTE See EN ISO 4287.

3.3
primary profile (P-profile)
digital form of the surface profile after application of the profile filter λs for suppressing the very short wavelength components due to noise and vibrations

NOTE 1 See EN ISO 3274 and EN ISO 11562.

NOTE 2 The primary profile is the basis for the evaluation of the primary profile parameter.