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

EESTI STANDARDIKESKUS
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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 10049:2013 sisaldab Euroopa standardi EN 10049:2013 inglisekeelset teksti.	This Estonian standard EVS-EN 10049:2013 consists of the English text of the European standard EN 10049:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 13.11.2013.	Date of Availability of the European standard is 13.11.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 01.040.17, 17.040.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 10049

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ICS 01.040.17; 17.040.20

Supersedes EN 10049:2005

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 29 August 2013.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 10049:2013) has been prepared by Technical Committee ECISS/TC 109 “Flat products for cold working - Qualities, dimensions, tolerances and specific tests”, 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 May 2014, and conflicting national standards shall be withdrawn at the latest by May 2014.

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.

This document supersedes EN 10049:2005.

The whole document was technically revised.

The European Committee for Iron and Steel Standardization (ECISS) has given Technical Committee 109 (Secretariat France) the task to prepare a European Standard on the measuring of roughness as a revision of EN 10049:2005.

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 organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the 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 3.1).

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.

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

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

3 Terms and definitions

For the purposes of this document, 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 1 to entry: See EN ISO 4287.

3.3
primary profile (P-profile)
digital form of the surface profile after sampling and applying a profile filter λs to suppress very short wavelength components due to noise and vibrations

Note 1 to entry: The measuring device is a stylus instrument conforming to EN ISO 3274 or an optical roughness measurement system.

Note 2 to entry: The profile filter λs is referred to in EN ISO 16610-21.

3.4
roughness profile (R-profile)
profile derived from the primary profile by suppressing the long wave components, using the profile filter λc