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Anodizing of aluminium and its alloys — Instrumental determination of image clarity of anodic oxidation coatings — Instrumental method

Anodisation de l'aluminium et de ses alliages — Détermination de la netteté d'image sur couches anodiques — Méthode instrumentale

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Principle **2**
5 Apparatus **2**
6 Test specimen **4**
6.1 Sampling 4
6.2 Size 4
6.3 Treatment before measurement 4
7 Procedure **5**
7.1 Measurement of black glass 5
7.2 Sensitivity adjustment by test specimen 5
7.3 Measurement of test specimen 5
8 Expression of results **5**
8.1 Calculation of image clarity, C_n 5
8.2 Image clarity 7
8.3 Image clarity comparison and classification 7
8.4 Optical evenness, E 7
8.5 Dispersion of light, D 7
9 Test report **8**
Bibliography **9**

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Foreword

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This document was prepared by Technical Committee ISO/TC 79, *Light metals and their alloys*, Subcommittee SC 2, *Organic and anodic oxidation coatings on aluminium*.

This fourth edition cancels and replaces the third edition (ISO 10216:2017), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the light source and photometer have been revised;

— the light source in the test report has been added.

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.

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Introduction

The clarity of images of anodic oxidation coatings on aluminium and its alloys is normally estimated visually: by observing the clearness of an image on the surface. However, the image can be observed at various angles and can therefore be confused with the gloss level of a surface. While the degree of image clarity is mainly influenced by the clearness of the coating, it is also affected by image distortion caused by surface irregularities and the haziness of the coating layer.

This document specifies the use of an instrumental method for measuring image clarity using an optical comb. A related document, ISO 10215, specifies the use of a chart scale which is also based on an optical comb together with a lightness scale to rank image clarity.

NOTE This instrumental method provides more accurate measurements of image clarity than visual evaluation and can be used in cases of dispute.

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Anodizing of aluminium and its alloys — Instrumental determination of image clarity of anodic oxidation coatings — Instrumental method

1 Scope

This document specifies an instrumental method for determining the image clarity of anodic oxidation coatings on aluminium and its alloys by measuring reflection from the surface with the help of a sliding combed shutter.

The test is applied to a flat surface that can reflect an image onto the limited combed shutter and photometer. This method can also be used to measure the optical evenness of anodic oxidation coatings on aluminium and its alloys.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 7583, *Anodizing of aluminium and its alloys — Terms and definitions*

ISO 7668, *Anodizing of aluminium and its alloys — Measurement of specular reflectance and specular gloss of anodic oxidation coatings at angles of 20°, 45°, 60° or 85°*

ISO/CIE 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers*

ISO/CIE 11664-2, *Colorimetry — Part 2: CIE standard illuminants*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7583 and the following 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 https://www.electropedia.org/

3.1
image clarity
C_n
ability of the surface of an anodic oxidation coating to produce a clear image of an object facing the surface

Note 1 to entry: Image clarity is expressed as a percentage.

3.2
optical evenness
E
degree of surface irregularities given by the ratio of the longitudinal and transverse values of the *image clarity* (3.1)

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