

**Anodizing of aluminium and its alloys - Assessment of
quality of sealed anodic oxidation coatings by
measurement of admittance**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 2931:2010 sisaldab Euroopa standardi EN ISO 2931:2010 ingliskeelset teksti.

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English Version

**Anodizing of aluminium and its alloys - Assessment of quality of
sealed anodic oxidation coatings by measurement of admittance
(ISO 2931:2010)**

Anodisation de l'aluminium et de ses alliages - Évaluation
de la qualité des couches anodiques colmatées par
mesurage de l'admittance (ISO 2931:2010)

Anodisieren von Aluminium und Aluminiumlegierungen -
Prüfung der Qualität von verdichteten, anodisch erzeugten
Oxidschichten durch Messung des Scheinleitwertes (ISO
2931:2010)

This European Standard was approved by CEN on 2 June 2010.

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Foreword

This document (EN ISO 2931:2010) has been prepared by Technical Committee ISO/TC 79 "Light metals and their alloys" in collaboration with Technical Committee CEN/TC 132 "Aluminium and aluminium alloys" 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of an identical text or by endorsement, at the latest by January 2011, and conflicting national standards shall be withdrawn at the latest by January 2011.

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Endorsement notice

The text of ISO 2931:2010 has been approved by CEN as a EN ISO 2931:2010 without any modification.

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Introduction

The test described in this International Standard is intended to give a quick, non-destructive assessment of the quality of sealed anodic oxidation coatings and is very suitable for routine production control. It is carried out following sealing and before any other supplementary process is undertaken, for example, oiling, waxing or lacquering.

The correlation of the results obtained with those of other sealing tests may be affected by the presence of sealing additives, or contaminants such as silicate or phosphate. For this reason, sealing quality is checked from time to time by one of the reference acid-dissolution methods specified in ISO 3210.

The pretreatment, the anodizing process, the colouring process used and the alloy can all have an effect on admittance readings.

Anodizing of aluminium and its alloys — Assessment of quality of sealed anodic oxidation coatings by measurement of admittance

1 Scope

This International Standard specifies a method for assessing the quality of sealed anodic oxidation coatings on aluminium and its alloys by measurement of the admittance.

The method is applicable to anodic oxidation coatings sealed in an aqueous medium.

The method is suitable for use as a production-control test and as an acceptance test where there is agreement between the supplier and the customer.

Any type of anodized component can be tested by the method described, provided that there is a sufficient area (a circle of diameter about 20 mm) and that the film thickness is greater than 3 µm.

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 2360, *Non-conductive coatings on non-magnetic electrically conductive basis materials — Measurement of coating thickness — Amplitude-sensitive eddy-current method*

3 Terms and definitions

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

3.1

admittance

Y

inverse of the complex apparent resistance, Z

$$Y = 1/Z$$

NOTE In an alternating current circuit, Z (impedance) is represented by the vectorial sum of actual resistance, R , and the reactance, X_c using Equation (1).

$$Z = \sqrt{X_c^2 + R^2} \quad (1)$$

where

R is the resistance, in ohms;

$X_c = \frac{1}{2\pi f C}$ is the reactance;