

## **Anodizing of aluminium and its alloys - Assessment of resistance of anodic oxidation coatings to cracking by deformation**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 3211:2010 sisaldab Euroopa standardi EN ISO 3211:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 01.09.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 3211:2010 consists of the English text of the European standard EN ISO 3211:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 01.09.2010.

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English Version

Anodizing of aluminium and its alloys - Assessment of  
resistance of anodic oxidation coatings to cracking by  
deformation (ISO 3211:2010)

Anodisation de l'aluminium et de ses alliages - Évaluation  
de la résistance des couches anodiques à la formation de  
craques par déformation (ISO 3211:2010)

Anodisieren von Aluminium und Aluminiumlegierungen -  
Prüfung der Beständigkeit von anodisch erzeugten  
Oxidschichten gegen Rissbildung bei Verformung (ISO  
3211:2010)

This European Standard was approved by CEN on 31 August 2010.

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## Foreword

The text of ISO 3211:2010 has been prepared by Technical Committee ISO/TC 79 "Light metals and their alloys" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 3211:2010 by 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of an identical text or by endorsement, at the latest by March 2011, and conflicting national standards shall be withdrawn at the latest by March 2011.

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### Endorsement notice

The text of ISO 3211:2010 has been approved by CEN as a EN ISO 3211:2010 without any modification.

# Anodizing of aluminium and its alloys — Assessment of resistance of anodic oxidation coatings to cracking by deformation

## 1 Scope

This International Standard specifies an empirical method for assessing the resistance of anodic oxidation coatings to cracking by deformation.

The method is applicable particularly to sheet material with anodic oxidation coatings of thickness less than 5 µm, and is useful for development purposes.

NOTE If the test piece is thick, even more than 5 µm of coating can be measured (see Clause 6).

## 2 Principle

A test piece is bent along a spiral, graduated with a radius of curvature index, using a simple instrument. The radius of curvature corresponding to the region where the first cracks in the oxide layer appear is determined and the percentage elongation of the test piece corresponding to this radius is calculated.

## 3 Apparatus

**3.1 Measuring instrument**, as shown in Figure 1, which includes the following elements.

**3.1.1 Steel former**, mounted on a suitable base, in the shape of a spiral, graduated in deformation indexes,  $E$ , from 1 to 18. These indexes,  $E$ , correspond to radii of curvature,  $R$ , as shown in Table 1, and are derived from Equation (1):

$$R = 21 - E \quad (1)$$

where

$R$  is the radius of curvature, in centimetres;

$E$  is the deformation index corresponding to the region where the first cracks appear.

**3.1.2 Two screws**, for clamping the ends of the test piece.