Anodizing of aluminium and its alloys - Check for continuity of thin anodic oxidation coatings - Copper sulfate test

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 2085:2010 sisaldab Euroopa standardi EN ISO 2085:2010 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 2085:2010 consists of the English text of the European standard EN ISO 2085:2010.
Standard on kinnitatud Eesti Standardikeskuse 30.09.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.08.2010.	Date of Availability of the European standard text 15.08.2010.
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English Version

Anodizing of aluminium and its alloys - Check for continuity of thin anodic oxidation coatings - Copper sulfate test (ISO 2085:2010)

Anodisation de l'aluminium et de ses alliages - Contrôle de la continuité des couches anodiques minces - Essai au sulfate de cuivre (ISO 2085:2010)

Anodisieren von Aluminium und Aluminiumlegierungen - Prüfung der Kontinuität dünner anodisch erzeugter Oxidschichten - Kupfersulfatversuch (ISO 2085:2010)

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Foreword

This document (EN ISO 2085:2010) 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of an identical text or by endorsement, at the latest by February 2011, and conflicting national standards shall be withdrawn at the latest by February 2011.

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The text of ISO 2085:2010 has been approved by CEN as a EN ISO 2085:2010 without any modification.

Anodizing of aluminium and its alloys — Check for continuity of thin anodic oxidation coatings — Copper sulfate test

1 Scope

This International Standard specifies a method for checking the continuity of thin anodic oxidation coatings on aluminium and its alloys by a copper sulfate contact test.

The use of this method is limited to anodic oxidation coatings of thickness less than 5 µm, or coatings that have been deformed.

NOTE The method described enables a rapid check to be made for the continuity of a thin coating of aluminium oxidation on aluminium and its alloys. In cases of doubt regarding a visible fault on the surface of a coating, the use of this method makes it possible to verify whether the fault corresponds to a local gap in the coating which exposes bare metal.

2 Principle

Drops of copper sulfate reagent are placed on surface areas of about 100 mm^2, chosen at will on the test pieces, avoiding the anodizing contact areas. If the area includes points where the metal is either bare or poorly covered, chemical deposition of copper takes place on the aluminium, accompanied by a release of gas. The drops of applied reagent can be examined immediately upon application, either with the naked eye or with a magnifying glass, for the release of gas from points where the metal is bare, which is almost instantaneous. After the test, black and/or dark reddish spots can be seen where the coating is not continuous.

3 Reagents

3.1 Copper sulfate solution, prepared as follows:

— copper(II) sulfate pentahydrate, ($CuSO_4 \cdot 5H_2O$): 20 g;

— hydrochloric acid (ρ_{20} = 1,18 g/ml): 20 ml;

— distilled water or deionized water: make up to 1 000 ml.

4 Procedure

Carry out the test at room temperature.

Remove all grease from the test piece. Mark out a test area of approximately 100 mm^2 on a horizontal part of the test piece, using a wax crayon or a rapidly drying lacquer to delineate the test area, leaving the test area itself unmasked.

Cover the test area with the reagent (3.1), using approximately four drops. Leave the reagent in contact with the surface for 5 min, noting any release of gas, then rinse the area with clean water. Examine the surface and count the number of black and/or dark reddish spots per 100 mm^2.