Anodizing of aluminium and its alloys - Determination of the comparative fastness to ultraviolet light and heat of coloured anodic oxidation coatings

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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 6581:2010 sisaldab Euroopa standardi EN ISO 6581:2010 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 6581:2010 consists of the English text of the European standard EN ISO 6581:2010.
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 15.07.2010.	Date of Availability of the European standard text 15.07.2010.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 25.220.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 6581

July 2010

ICS 25.220.20

Supersedes EN 12373-8:1998

English Version

Anodizing of aluminium and its alloys - Determination of the comparative fastness to ultraviolet light and heat of coloured anodic oxidation coatings (ISO 6581:2010)

Anodisation de l'aluminium et de ses alliages - Détermination de la solidité comparée à la lumière ultraviolette et à la chaleur des couches anodiques colorées (ISO 6581:2010)

Anodisieren von Aluminium und Aluminiumlegierungen - Vergleichsbestimmung der Beständigkeit von gefärbten, anodisch erzeugten Oxidschichten gegen ultraviolettes Licht und Wärme (ISO 6581:2010)

This European Standard was approved by CEN on 23 June 2010.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 6581:2010) 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.

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.

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Endorsement notice

The text of ISO 6581:2010 has been approved by CEN as a EN ISO 6581:2010 without any modification.

Introduction

The test described in this International Standard represents severe exposure to ultraviolet light and, because of its severity, provides a very rapid determination of the comparative light-fastness of coloured anodic oxidation coatings.

It has to be realized, however, that the light emitted by the mercury vapour source used in the test has a discontinuous spectrum and a high content of ultraviolet radiation. Care must therefore be taken in comparing the results of this test with the results of exposure to sunlight.

Considerable heat is generated by the light source, and the test needs to be carried out in such a way that the temperature of the test pieces during the test does not exceed 100 °C.

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1 Scope

This International Standard specifies a comparative method for the determination of the fastness of coloured anodic oxidation coatings to ultraviolet (UV) light and heat.

The method is not suitable for testing coloured anodic oxidation coatings that are heat sensitive.

NOTE Dark-coloured test pieces will normally reach the highest temperatures.

2 Principle

Test pieces are exposed to ultraviolet light and the colour changes taking place are observed and compared with standard or control specimens.

3 Apparatus

3.1 General

The apparatus consists of a cabinet made from suitable heat-resistant material with a source of ultraviolet light and an arrangement of specimen holders or supports placed at an equal distance from the light source.

3.2 Cabinet

The cabinet shall be designed so that all exposed test pieces can be positioned at equal distances from the lamp.

NOTE A cylindrical cabinet with the lamp placed vertically in the centre, or a cabinet of rectangular cross-section with the lamp placed horizontally above a support on which the test pieces are placed, is suitable.

Increasing the test temperature increases the rate of fading of the test pieces and their surface temperature in the test cabinet shall not be allowed to exceed 100 °C during any part of the test. In some cases, this will require the cabinet and test pieces to be cooled by means of a suitable fan. Care shall be taken to avoid over-cooling the lamp itself as this may affect the arc, and the lamp manufacturer's advice on this aspect should be followed.

WARNING — The cabinet shall be totally enclosed or suitably baffled to eliminate any possibility of ultraviolet light escaping, since certain ultraviolet wavelengths can damage the eyes. A micro-switch shall be fitted to the opening part of the cabinet, such that the light source is automatically switched off when the cabinet is opened.

Many ultraviolet light sources produce ozone under the conditions of testing (see 3.3) and this can also constitute a health hazard. If ozone is produced by the action of the lamp, it is desirable to have