SIST

SLOVENSKI STANDARD
SIST EN 2716:2019

01-januar-2019

Aeronavtika - Preskusna metoda – Ugotavljanje dovzetnosti za interkristalno korozijo - Izdelki iz aluminijeve zlitine serije AL-P2XXX, serije AL-P7XXX in aluminij -litijeve zlitine

Aerospace series - Test method - Determination of susceptibility to intergranular corrosion - Wrought aluminium alloy products AL-P2XXX- series, AL-P7XXX- series and aluminium-lithium alloys

Luft- und Raumfahrt - Prüfverfahren - Bestimmung der Anfälligkeit für interkristalline Korrosion - Aluminium-Kneterzeugnisse aus AL-P2XXX- , AL-P7XXX- und Aluminium-Lithium-Legierung

Série aérospatiale - Méthodes d'essai - Détermination de la susceptibilité à la corrosion intergranulaire - Produits corroyés en alliages d'aluminium série AL-P2XXX-, série AL-P7XXX- et alliages d'aluminium-lithium

Ta slovenski standard je istoveten z: **EN 2716:2018**

ICS:

49.025.20 Aluminij Aluminium

SIST EN 2716:2019 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 2716

November 2018

ICS 49.025.20

English Version

Aerospace series - Test method - Determination of susceptibility to intergranular corrosion - Wrought aluminium alloy products AL-P2XXX- series, AL-P7XXX-series and aluminium-lithium alloys

Série aérospatiale - Méthodes d'essai - Détermination de la susceptibilité à la corrosion intergranulaire - Produits corroyés en alliages d'aluminium série AL-P2XXX-, série AL-P7XXX- et alliages d'aluminium-lithium

Luft- und Raumfahrt - Prüfverfahren - Bestimmung der Anfälligkeit für interkristalline Korrosion - Aluminium-Kneterzeugnisse aus AL-P2XXX- , AL-P7XXX- und Aluminium-Lithium-Legierung

This European Standard was approved by CEN on 17 September 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 2716:2018 E

Contents

Page

European foreword

This document (EN 2716:2018) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

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 May 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the procedure for the determination of the susceptibility to intergranular corrosion of wrought aluminium alloys in AL-P2XXX- series, AL-P7XXX- series and aluminium-lithium alloy products.

It does not consider health and safety requirements. It is the responsibility of the user to adopt appropriate health and safety precautions when hazardous substances are involved.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

IEC Electropedia: available at http://www.electropedia.org/

ISO Online browsing platform: available at http://www.iso.org/obp

4 Test procedure

4.1 Test sample location

Unless otherwise agreed between manufacturer and purchaser, the manufacturer shall define and record the location of the test sample. The test direction shall be parallel to the direction of working.

4.2 Preparation of test samples

Test samples shall be prepared as follows:

- for clad products remove the cladding by a suitable method;
- degrease the test sample in acetone;
- immerse the test sample for 1 min in the solution shown in Table 1 at a temperature of 95 °C ± 5 °C.

Table 1 — Solution for the preparation of test samples

Reagents	% vol.
Nitric acid 70 % concentrated	5
Hydrofluoric acid 40 % concentrated	0,5
Demineralised or deionised water	94,5

- rinse in demineralised or deionised water;
- desmutt in nitric acid 70 % concentrated at ambient temperature;
- rinse in demineralised or deionised water;
- dry.

4.3 Intergranular corrosion test

The test samples, prepared in accordance with 2.2, shall be immersed vertically, in a freshly prepared test solution to Table 2, at a temperature of 25 °C ± 5 °C.

Table 2 — Test solution for corrosion test

Reagents	Quantity
NaCl analytical grade	57 g
Hydrogen peroxide 30 % concentration	10 ml
Demineralised or deionised water	make up to 1 000 ml

The volume of solution used shall not be less than 10 ml of solution per square centimetre of specimen surface area.

When several samples of the same alloy are immersed together, the samples shall be electrically isolated from each other and the volume of solution shall conform to the above requirement.

The time of immersion shall be 6 h.

After immersion, remove and rinse the test samples in demineralised or deionised water and dry.

5 Microscopic examination

5.1 From the area exhibiting the most severe surface corrosion attack, a section at least 20 mm long shall be taken perpendicular to the direction of working and prepared for micrographic examination by polishing. This micro-section shall be examined at a magnification from 100 times to 500 times.

5.2 After an initial examination, the prepared micro-section shall be etched using the etchant in Table 3 at ambient temperature and then re-examined:

Table 3 — Etchant for the microscopic examination

Reagents	% vol.
Nitric acid 70 % concentrated	2,5
Hydrochloric acid 35 % concentrated	1,5
Hydrofluoric acid 40 % concentrated	1
Demineralised or deionised water	95

The time of immersion shall not exceed 30 s.

6 Acceptance criteria

The results of the examination shall meet the requirements of the relevant technical specification, material standard, drawing, order or inspection schedule.