



SLOVENSKI STANDARD

SIST EN 3769:2001

01-junij-2001

Aerospace series - Electrolytic polishing of corrosion resisting steels and heat resisting alloys

Aerospace series - Electrolytic polishing of corrosion resisting steels and heat resisting alloys

Luft- und Raumfahrt - Elektrolytisches Polieren von korrosionsbeständigen Stählen und hochwärmfesten Legierungen

Série aérospatiale - Polissage électrolytique des aciers résistant a la corrosion et des alliages résistant a chaud

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Ta slovenski standard je istoveten z: EN 3769:1997

ICS:

49.040	Preveleke in z njimi povezani postopki, ki se uporabljajo v letalski in vesoljski industriji	Coatings and related processes used in aerospace industry
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EUROPEAN STANDARD

EN 3769

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1997

ICS 49.040.40

Descriptors: aircraft industry, corrosion resisting steels, heat resistant steels, alloys, electropolishing, characteristics, inspection, tests, quality assurance, designation

English version

Aerospace series - Electrolytic polishing of corrosion resisting steels and heat resisting alloys

Série aérospatiale - Polissage électrolytique
des aciers résistant à la corrosion et des
alliages résistant à chaud

Luft- und Raumfahrt - Elektrolytisches Polieren
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries 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 AECMA, 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 September 1997, and conflicting national standards shall be withdrawn at the latest by September 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

This standard specifies the electrolytic polishing of corrosion resisting steels and heat resisting alloys used in aerospace constructions.

It shall be applicable whenever referenced.

2 Purpose of process

To improve the surface condition and/or increase the corrosion resistance by eliminating any metallic surface contamination

3 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 9227 Corrosion tests in artificial atmospheres - Salt spray tests

EN 2000 Aerospace series - Quality assurance - EN aerospace products - Approval of the quality system of manufacturers

EN 2516 Aerospace series - Passivation of corrosion resisting steels and decontamination of nickel base alloys

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4 Definitions

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For the purposes of this standard, the following definitions apply:

4.1 **Batch** : unless otherwise specified, it shall comprise parts of the same nature (form, size, material), treated at the same time in the same bath.

4.2 **Pre-production parts** : parts representing future production

5 Information for the processor

- Designation, see 11 ;
- number of the material standard and metallurgical condition of the latter ;
- areas to be processed ;
- permitted electrical contact points or areas where these are prohibited.

6 Treatment

The parts shall be :

- degreased and deoxidized ;
- treated in a solution. Examples of appropriate solutions are described in annex A ;
- rinsed and dried.

To improve corrosion resistance, a passivation in accordance with EN 2516 may be carried out.

7 Required characteristics

7.1 Appearance

The surface shall be smooth and glossy, free from corrosion pittings.

7.2 Surface cleanness and corrosion resistance

The surface of the parts shall have no metallic contamination and no signs of corrosion even after 24 h of exposure to salt spray.

7.3 Dimensions and surface roughness after processing

They shall be in accordance with the indications in the design documents.

7.4 Intergranular corrosion

The surface of the parts shall have no such corrosion.

8 Inspection and test methods

8.1 Approval of the process

8.1.1 Appearance

Visual inspection

8.1.2 Surface cleanness and corrosion resistance

The salt spray test shall be made in accordance with ISO 9227 in a 5 % solution of sodium chloride.

8.1.3 Dimensions and surface roughness after processing

They shall be verified by dimensional measurements carried out before and after processing.

8.1.4 Intergranular corrosion

Metallographic examination shall be made on a cross-section at a magnification of min. 300 times.

8.2 Acceptance of parts

8.2.1 Appearance

See 8.1.1.

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8.2.2 Surface cleanness and corrosion resistance

See 8.1.2.

8.2.3 Dimensional inspection

See 8.1.3.

8.2.4 Intergranular corrosion

See 8.1.4.

9 Quality assurance

9.1 Approval of the processor

See EN 2000.

9.2 Process approval

The processor shall carry out :

- electrolytic polishing on pre-production parts and/or test pieces, determined by agreement between the purchaser and processor ;
- tests specified in this standard, unless otherwise agreed between the purchaser and processor.

Other specific tests may be carried out at the purchaser's request, for example creep, impact strength, etc..

When the test results have been accepted as satisfactory by the purchaser, he shall give his written approval to start production.

The procedure shall not be changed without previous agreement from the purchaser.

9.3 Acceptance

The frequency and nature of the inspection of parts and test pieces shall be defined in the design documents or determined by agreement between the purchaser and processor.

The appearance inspection (see 8.2.1) shall be carried out on the whole batch unless otherwise specified. By no means it shall be less than 10 % of the batch with a minimum of 20 parts.

In case of accompanying test pieces, the metallographic examination (see 8.2.4) shall be carried out at a rate of one test per batch.

The frequency of the other tests (see 8.2.2 and 8.2.3) shall be determined by agreement between the purchaser and processor.

9.4 Re-treatment

It is permitted if the parts are not within the specified dimensions or if the surface roughness is not achieved.

10 Health, safety and environmental aspects

The locally applicable regulations and laws shall be observed.

11 Designation

EN3769

Number of this standard

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