
Aerospace series - Paints and varnishes - Corrosion test by alternate immersion in a buffered sodium chloride solution

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Luft- und Raumfahrt - Anstrichstoffe - Bestimmung der Korrosionsbeständigkeit durch Wechseltauchversuch in einer gepufferten Natriumchloridlösung

Série aérospatiale - Peintures et vernis - Essais de corrosion par immersions-émersions alternées dans une solution tamponnée de chlorure de sodium

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Ta slovenski standard je istoveten z: EN 3212:1995

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 3212

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 1995

ICS 49.040.10

Descriptors: aircraft industry, paints, varnishes, corrosion tests, immersion tests, soluble matter, sodium chloride

English version

**Aerospace series - Paints and varnishes -
Corrosion test by alternate immersion in a
buffered sodium chloride solution**

Série aérospatiale - Peintures et vernis - Luft- und Raumfahrt - Anstrichstoffe -
Essais de corrosion par immersions-émersions Bestimmung der Korrosionsbeständigkeit durch
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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

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

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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 successively 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of an identical text or by endorsement, at the latest by March 1996, and conflicting national standards shall be withdrawn at the latest by March 1996.

According to the CEN/CENELEC Internal Regulations, 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, United Kingdom.

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1 Scope

This standard specifies methods for corrosion test on paints and varnishes by alternate immersion in a buffered sodium chloride solution.

2 Normatives 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 4628-1 Paints and varnishes - Evaluation of degradation of paint coatings - Designation of intensity, quantity and size of common types of defect - Part 1 : General principles and rating schemes

EN 2633 Aerospace series - Aluminium alloy AL-P2024- - T3511 - Extruded bars and sections - $1,2 \leq a$ or $D \leq 150$ mm with peripheral coarse grain control

3 Principle

Immerse then emerge a test piece in a test solution.

4 Apparatus

An environmental chamber equipped with glass or plastic tanks containing the test solution and an appropriate device to carry out the test automatically and continuously.

This chamber shall be maintained at a temperature of (35 ± 2) °C and at a relative humidity ≥ 80 %.

5 Test solution

- | | | | |
|--|---|------|-----|
| - Sodium chloride (NaCl) | : | 30 | g/l |
| - Disodium phosphate (Na_2HPO_4) | : | 0,19 | g/l |
| - Boric acid (H_3BO_3) | : | 1,25 | g/l |
| - Distilled or deionized water | | | |

The pH of the solution shall be adjusted to $(8 \pm 0,1)$ by adding a solution of 100 g/l of sodium carbonate in the distilled or deionized water.

6 Test pieces

- | | | |
|-------------------------------------|---|---------------------|
| - Material | : | EN 2633 |
| - Minimum dimensions in millimetres | : | 100 x 40 x 0,8 to 2 |

Unless otherwise specified, test pieces shall be sensitized to intergranular corrosion by holding them for 1h at (495 ± 2) °C in an oven followed by quenching in boiling water.

The coating is specified in the standards for paints and varnishes.

7 Procedure

Make cuts in the test pieces in accordance with annexes A and/or B.

Attach the test piece to the test device by means of insulating material.

Immerse the test piece so that it is surrounded by at least 10 mm of the test solution. If there are several test pieces in a chamber, the distance between the test pieces shall be at least 10 mm. The volume of the solution shall be $> 4 \text{ ml/cm}^2$ of the test pieces surface.

A cycle comprises 2 h of immersion and 2 h of emersion.

The level of the test solution shall be maintained constant by adding distilled or deionized water. The test solution shall be renewed twice during the first week, then every ten days.

Visually examine the test pieces at regular intervals and at the end of the test and record any appearance of blisters or corrosion.

On completion of the test, the test piece shall be :

- rinsed in distilled or denionized water ;
- dried with absorbent paper or a cloth ;
- examined visually so as to assess the degree of blistering in accordance with ISO 4628-1.

Measure the extent of any corrosion on both sides of the cut.

Perform any test required by the standards for paints or varnishes.

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8 Test report

It shall include the following :

- designation of the test ;
- identification of the paint or varnish ;
- preparation of surface and application and drying conditions of the paint or varnish ;
- coating thickness ;
- test period ;
- date of test ;
- deviations from this standard.

9 Designation

EXAMPLE :

Number of this standard	EN3212 A
Cut shape (see annex B)	

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Annex A (normative)

Position of cuts

