



SLOVENSKI STANDARD

SIST EN ISO 3613:1999

01-oktober-1999

S kromatenjem nanasene plasti na cinku in kadmiju – Metode preskušanja (ISO 3613:1980)

Chromate conversion coatings on zinc and cadmium - Test methods (ISO 3613:1980)

Chromatierüberzüge auf Zink und Cadmium - Prüfverfahren (ISO 3613:1980)

Couches de conversion au chromate sur zinc et cadmium - Méthodes d'essai (ISO 3613:1980)

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Ta slovenski standard je istoveten z: EN ISO 3613:1994

SIST EN ISO 3613:1999
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ICS:

25.220.20 Površinska obdelava Surface treatment

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en

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EUROPEAN STANDARD

EN ISO 3613

NORME EUROPÉENNE

EUROPÄISCHE NORM

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Descriptors: non metallic coatings, conversion coatings, chromate coatings, tests, chemical tests

English version

Chromate conversion coatings on zinc and cadmium - Test methods (ISO 3613:1980)

Couches de conversion au chromate sur zinc et cadmium - Méthodes d'essai (ISO 3613:1980)

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REPUBLIKA SLOVENIJA
MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO
Urad RS za standardizacijo in meroslovje
LJUBLJANA

SIST... EN ISO 3613 -10- 1999
PREVZET PO METODI RAZGLASITVE

This European Standard was approved by CEN on 1994-10-26. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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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EN ISO 3613:1994

Foreword

This European Standard was taken over by the Technical Committee CEN/TC 262 "Protection of metallic materials against corrosion" from the work of ISO/TC 107 "Metallic and other inorganic coatings" of the International Standards Organization (ISO).

CEN/TC 262 had decided to submit the final draft for Formal Vote. The result was positive.

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 April 1995, and conflicting national standards shall be withdrawn at the latest by April 1995.

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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Endorsement notice

The text of the International Standard ISO 3613:1980 has been approved by CEN as a European Standard without any modification.

ISO 3613:1999
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NOTE: Normative references to international publications are listed in annex ZA (normative).



Annex ZA (normative)**Normative references to international publications
with their relevant European publications**

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 (including amendments).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
ISO 3768		Metallic coatings - Neutral salt spray test - (NSS test)		
ISO 3892		Conversion coatings on metallic materials - Determination of coating mass per unit area - Gravimetric methods	EN ISO 3892	

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International Standard



3613

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Chromate conversion coatings on zinc and cadmium — Test methods

Couches de conversion au chromate sur zinc et cadmium — Méthodes d'essai

First edition — 1980-09-01

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UDC 669.58 + 669.738 : 620.19

Ref. No. ISO 3613-1980 (E)

Descriptors : non-metallic coatings, conversion coatings, chromate coatings, tests, chemical tests.

Price based on 4 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3613 was developed by Technical Committee ISO/TC 107, *Metallic and other non-organic coatings*, and was circulated to the member bodies in August 1977.

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It has been approved by the member bodies of the following countries :

Australia	Israel	South Africa, Rep. of
Austria	Italy	Spain
Brazil	Japan	Sweden
Czechoslovakia	Mexico	Switzerland
France	Netherlands	United Kingdom
Germany, F. R.	New Zealand	USA
Hungary	Philippines	USSR
India	Romania	

The member body of the following country expressed disapproval of the document on technical grounds :

Poland

Chromate conversion coatings on zinc and cadmium — Test methods

1 Scope and field of application

This International Standard specifies methods for the determination on zinc and cadmium of :

- the presence of colourless¹⁾ chromate conversion coatings;
- the presence and quantity of hexavalent chromium in colourless and coloured coatings;
- the total chromium content per unit area;
- the satisfactory adhesion of coloured coatings.

These methods are applicable only to chromate conversion coatings which are free from any supplementary coating, such as oil, water or solvent-based polymers, or wax.

A method for the determination of mass per unit area of both colourless and coloured chromate conversion coatings and for the neutral salt spray test are specified in ISO 3892 and ISO 3768 respectively and are listed in 3.5 and 3.7 for completeness.

2 References

ISO 3768, *Metallic coatings — Neutral salt spray test (NSS test)*.

ISO 3892, *Conversion coatings on metallic materials — Determination of coating mass per unit area — Gravimetric methods²⁾*.

3 Test methods

The tests shall be carried out within the following time limits :

- minimum 24 h after the application of the chromate conversion coating for all tests (3.1 to 3.7);
- maximum 3 days for tests specified in 3.1 and 3.2³⁾;
- maximum 30 days for tests specified in 3.1 and 3.4

3.1 Test for presence of a colourless chromate coating

3.1.1 Test solution

Dissolve 50 g of lead acetate trihydrate $[(\text{CH}_3\text{COO})_2\text{Pb}\cdot 3\text{H}_2\text{O}]$ in 1 litre of distilled or deionized water. The pH of the solution shall be between 5,5 and 6,8.

Any white precipitate formed during the initial preparation of the solution may be dissolved by small additions of acetic acid, provided that the pH is not reduced to a value below 5,5. Discard the solution as soon as a white precipitate forms.

3.1.2 Procedure

Place 1 drop of the lead acetate solution (3.1.1) on the surface to be tested.

In the case of a zinc substrate, observe the spot for 3 min. The presence of a colourless chromate conversion coating will be indicated when the formation of a dark or black stain is delayed by at least 1 min after application of the test solution. Delay of black stain formation by more than 3 min may be indicative of supplementary coatings, such as wax or oil (see note).

In the case of a cadmium substrate, observe the spot for 1 min. The presence of a colourless chromate conversion coating will be indicated when the formation of a dark or black stain is delayed by at least 6 s. Delay of black stain formation by more than 1 min may be indicative of supplementary coatings, such as wax or oil.

Zinc and cadmium surfaces which have not been treated with a chromate conversion coating will react with the lead acetate solution to form a black stain within 2 to 5 s.

No significance should be placed upon any differences in reaction time to black spot formation between 1 and 3 min on a zinc substrate with colourless chromate conversion treatment, or between 6 to 60 s on a cadmium substrate with colourless chromate conversion treatment. Factors such as substrate surface texture (roughness), chromate film thickness variations (due to processing conditions), variations in the ambient temperature of the test, and precise pH control of the lead

1) The application of very thin, colourless, practically invisible chromate conversion coatings is frequently called "passivation", while the application of thicker, coloured chromate conversion coatings is often called "chromating". The term "passivation" is deprecated.

2) At present at the stage of draft.

3) This may require that special arrangements be made between the purchaser and supplier.