

Corrosiebescherming van metalen.
Elektrolytisch aangebrachte dek-
lagen van zink op ijzer en staal

Publikatie uitsluitend voor commentaar

Corrosion protection of metals. Electrodeposited coatings of
zink on iron and steel

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Commentaar voor 15 juli 1996

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prEN 12329 Corrosion protection of metals. Electrodeposited coatings of zink on iron and steel

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Prijsklasse 24

Voorbeeld
Preview

ICS

Descriptors :

English version

Corrosion protection of metals - Electrodeposited
coatings of zinc on iron or steel

Protection contre la corrosion des
métaux - Revêtements électrolytiques
de zinc sur fer ou acier

Korrosionsschutz von Metallen -
Galvanische Zinküberzüge auf
Eisenwerkstoffen

This draft European Standard is submitted to the CEN members for CEN enquiry.
It has been drawn up by Technical Committee CEN/TC 262 .

If this draft becomes a European Standard, CEN members are bound to comply with
the CEN/CENELEC Internal Regulations which stipulate the conditions for giving
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CEN

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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 Technical Committee CEN/TC 262 "Protection of metallic materials against corrosion", the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

Forbiede
Preview

Introduction

Electrodeposited coatings of zinc can be chromate treated in order to retard the formation of corrosion products on surfaces of coatings exposed to corrosive atmospheres. When corrosion protection is the main purpose of the coating, the usual practice is to apply a chromate conversion coating on top of the electrodeposited zinc coating. This is particularly effective in retarding the formation of white corrosion products which form on zinc coatings under certain conditions (see annex A).

Certain types of chromate conversion coatings can be coloured in order to facilitate identification of the treated articles.

1 Scope

NOTE : This European prEN Standard is not intended to be used alone, but it is the complement of prEN 1403 *Method of specifying general requirements for electrodeposited coatings*. It is necessary for the purchaser to specify the zinc electrodeposited coating in accordance with the classification code as specified in prEN 1403.

This European Standard specifies requirements for electrodeposited coatings of zinc on iron or steel with the application of chromate conversion coatings.

This European Standard does not specify chromate finishes which are required only for improving the adhesion of paints or varnishes.

2 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.

prEN 1403 : 1994 Corrosion protection of metals - Electrodeposited coatings - Method of specifying general requirements

ISO 1461: 1973 - Metallic coatings - Hot-dip galvanized coatings.

EN ISO 1463: 1994 - Metallic and oxide coatings - Measurement of coating thickness - Microscopical method.

EN ISO 2177: 1994 - Metallic coatings - Measurement of coating thickness - Coulometric method by anodic dissolution.

EN ISO 2178 : 1982 - Non-magnetic coatings on magnetic substrates measurement of coating thickness - Magnetic method.

EN ISO 2360: 1982 - Non-conductive coatings on non-magnetic basis metals - Measurement of coating thickness - Eddy current method

EN ISO 2819: 1994 - Metallic coatings on metallic substrates - Electrodeposited and chemically deposited coatings - Review of methods available for testing adhesion.

ISO 3497: 1990 - Metallic coatings - Measurement of coating thickness - X-ray method.

EN ISO 3543: 1994 - Metallic and non-metallic coatings - Measurement of coating thickness - Beta backscatter method.

EN ISO 3613: 1994 - Chromate conversion coatings on zinc and cadmium - Test methods.

EN ISO 3892: 1994 - Conversion coatings on metallic materials - Determination of mass per unit area - Gravimetric methods.

ISO 9227: 1990 - Corrosion tests in artificial atmospheres - Salt spray tests.

3 Definitions

For the purpose of this standard the definition given in prEN 1403 apply.

4 Information to be supplied by the purchaser

The information to be supplied by the purchaser shall be as specified in PrEN 1403. In addition, the purchaser shall use the classification code specified in clause 5.

5 Classification code

5.1 General

The appropriate classification code according to the severity of service conditions which the coating has to withstand (see annex B) shall be used.

NOTE: Examples of classification codes are given in annex C.

5.2 Heat treatment

The heat treatment classification code as described in prEN 1403 shall be used (see clause 6).

5.3 Chromate conversion coatings

The codes for chromate conversion coatings given in annex B shall be used.

NOTE: See annex A for more information on chromate conversion coatings.

5.4 Supplementary treatments

Treatments carried out after chromating to enhance its corrosion resistance (sealants) or to colour it (dyes) shall be specified in the classification code using the symbols given in prEN 1403

NOTE: See the introduction A.2 and A.5 for more information on sealing and dyeing.

6 Heat treatment

Any heat treatment for the relief of hydrogen embrittlement shall be carried out before a chromate conversion coating is applied.

NOTE 1: Heat treatment times and temperatures are specified in ISO/DIS 9587 for stress relieving before processing and in ISO/DIS 9588 for embrittlement relief after processing, but other conditions may be specified by the purchaser provided that they can be shown to be effective.

NOTE 2: Heat treatment in accordance with the recommended conditions can never guarantee complete freedom from hydrogen embrittlement and tests should be specified whenever possible. Freedom from failure of test samples shall enable a degree of confidence in the procedure to be demonstrated depending on the size of the sample tested.

7 Requirements

7.1 General

All tests (including corrosion resistance tests) shall be deferred until the expiry of a period of 24 h after the chromating process has ended.

NOTE: Chromate conversion coatings harden with age by gradual dehydration. They should therefore be handled carefully for the first 24 h after the treatment.

7.2 Appearance

Over the significant surface, the electroplated articles shall be free from clearly visible plating defects such as blisters, pits, roughness, cracks or un-plated areas other than those arising from defects in the basis metal.

Chromated parts shall be free from bare patches and unchromated areas.

7.3 Thickness

7.3.1 Minimum local thickness

When tested in accordance with one of the following standards : EN ISO 1463, EN ISO 2177, ISO 2178, ISO 2360, ISO 3497, EN ISO 3543, the minimum local thickness of the zinc coating on articles having significant surface area greater than 1 cm² shall conform to that specified in its classification code.

NOTE : Before using the method specified in EN ISO 2177, it is necessary to remove the chromate or other conversion coating using a very mild abrasive, for example a paste of levigated alumina. In the case of heavy conversion coatings, the results will, therefore, be slightly low.

7.3.2 Average thickness

The average thickness of the zinc coating on small parts when measured by the method specified in annex D shall be that specified in the classification code.

7.4 Adhesion

7.4.1 Adhesion of zinc coating

When tested by the burnishing test in EN ISO 2819 the zinc coating shall have good adhesion.

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