

Corrosion protection of metals - Non-electrolytically applied zinc flake coatings on iron or steel components

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13858:2003 sisaldab Euroopa standardi EN 13858:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 17.09.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13858:2003 consists of the English text of the European standard EN 13858:2003.</p> <p>This document is endorsed on 17.09.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This European Standard describes the characteristics of and specifies requirements for non-electrolytically applied coatings, composed mainly of zinc flakes, for the protection against corrosion of steel components, excluding threaded fasteners for which another specification exists (see prEN ISO 10683)</p>	<p>Scope: This European Standard describes the characteristics of and specifies requirements for non-electrolytically applied coatings, composed mainly of zinc flakes, for the protection against corrosion of steel components, excluding threaded fasteners for which another specification exists (see prEN ISO 10683)</p>
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ICS 25.220.40

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ICS 25.220.40

English version

Corrosion protection of metals - Non-electrolytically applied zinc flake coatings on iron or steel components

Protection des métaux contre la corrosion - Revêtements non électrolytiques de lamelles de zinc sur des composants en fer ou en acier

Korrosionsschutz von Metallen - Nicht elektrolytisch aufgetragene schuppenförmige Zinküberzüge auf Werkstücken aus Eisen oder Stahl

This European Standard was approved by CEN on 10 July 2003.

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 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 Management Centre has the same status as the official versions.

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



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Foreword

This document (EN 13858:2003) has been prepared by Technical Committee CEN/TC 262 "Metallic and other inorganic coatings", the secretariat of which is held by BSI.

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 February 2004, and conflicting national standards shall be withdrawn at the latest by February 2004.

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

Introduction

The purpose of non-electrolytically applied zinc flake coatings (which may contain a small proportion of aluminium flakes) is for the improvement of corrosion protection of steel components. These coatings can also incorporate an integral lubricant, for the improvement of lubricity, if required.

The non-electrolytically applied zinc flake coatings for iron and steel components can be obtained by cold immersion or by pneumatic or electrostatic gun-spraying of the coating liquid, followed by curing. These coatings may also contain a certain proportion of aluminium flakes. There is no risk of hydrogen embrittlement associated with the coating process and the subsequent curing treatment. Coating processes by cold immersion ensure complete coverage of components, even with complex shapes.

The coatings give cathodic protection to steel under normal atmospheric conditions.

The efficiency of a zinc flake based coating for corrosion protection depends on its thickness and on the type of corrosive environment to which it is exposed.

The results of accelerated corrosion tests, like the neutral salt spray test, have no direct correlation with the corrosion protection in other environments.

Variations in colour or lubricity can be obtained by applying a suitable supplementary coat to zinc flake based coatings.

WARNING — When welding zinc flake coated articles, ensure adequate ventilation is provided in order to evacuate fumes from the welding area.

1 Scope

This European Standard describes the characteristics of and specifies requirements for non-electrolytically applied coatings, composed mainly of zinc flakes, for the protection against corrosion of steel components, excluding threaded fasteners for which another specification exists (see prEN ISO 10683).

It specifies minimum corrosion resistance to the neutral salt spray test in accordance with ISO 9227 when applied to steel components.

The coatings can be supplied with integral lubricant if specified.

The application processes used for zinc flake coatings do not induce hydrogen embrittlement. For this reason, these coatings are specifically recommended for the protection of high strength steel components ($R_m \geq 1\,000$ MPa).

The time and temperature used for the curing of the coating can influence the mechanical characteristics of certain components due to their metallurgical condition.

NOTE These coatings should not be applied to components that can be used at temperatures higher than the curing temperature of the coating, unless specifically ordered.

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 (including amendments).

EN ISO 1463, *Metallic and oxide coatings — Measurement of coating thickness — Microscopical method (ISO 1463:1982)*.

EN ISO 2064:2000, *Metallic and other inorganic coatings — Definitions and conventions concerning the measurement of thickness (ISO 2064:1996)*.

EN ISO 2178, *Non-magnetic coatings on magnetic substrates — Measurement of coating thickness — Magnetic method (ISO 2178:1982)*.

EN ISO 3882, *Metallic and other inorganic coatings — Review of methods of measurement of thickness (ISO 3882:2003)*.

ISO 8991, *Designation system for fasteners*.

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*.