

**Zinc coatings - Guidelines and recommendations for the protection against corrosion of iron and steel in structures - Part 3: Sherardizing**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 14713-3:2010 sisaldab Euroopa standardi EN ISO 14713-3:2009 ingliskeelset teksti.

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Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 14713-3:2010 consists of the English text of the European standard EN ISO 14713-3:2009.

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Date of Availability of the European standard text .

The standard is available from Estonian standardisation organisation.

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English Version

Zinc coatings - Guidelines and recommendations for the  
protection against corrosion of iron and steel in structures - Part  
3: Sherardizing (ISO 14713-3:2009)

Revêtements de zinc - Lignes directrices et  
recommandations pour la protection contre la corrosion du  
fer et de l'acier dans les constructions - Partie 3:  
Shérardisation (ISO 14713-3:2009)

Zinküberzüge - Leitfäden und Empfehlungen zum Schutz  
von Eisen- und Stahlkonstruktionen vor Korrosion - Teil 3:  
Sherardisieren (ISO 14713-3:2009)

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## Foreword

This document (EN ISO 14713-3:2009) has been prepared by Technical Committee ISO/TC 107 "Metallic and other inorganic coatings" in collaboration with 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of an identical text or by endorsement, at the latest by June 2010, and conflicting national standards shall be withdrawn at the latest by June 2010.

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### Endorsement notice

The text of ISO 14713-3:2009 has been approved by CEN as a EN ISO 14713-3:2009 without any modification.

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## Introduction

Sherardizing is a thermal diffusion process in which articles are heated in the presence of a sherardizing mixture consisting of zinc dust with or without an inert material.

The process is carried out in a slowly rotating closed container at temperatures ranging from about 300 °C to 500 °C. The normal processing temperature is below the melting point of zinc (419 °C).

During the process, zinc/iron alloys are built up on the surface of the ferrous articles. A coating thickness of 10 µm to 75 µm (and higher if required) can be achieved. The coating thickness is accurately controlled by the amount of zinc dust, the processing time and temperature. The coating closely follows the contours of the basis material, and uniform coatings are produced on articles, including those of irregular shape.

After sherardizing, the containers are cooled down. A screening process separates the sherardized articles from the unused sherardizing mixture. The articles, with the zinc/iron-alloyed layer, are normally post-treated by phosphating, chromating or another suitable passivation process (conversion coating) resulting in a dust free and clean passivated surface.

Most steel and iron articles can be sherardized.

# **Zinc coatings — Guidelines and recommendations for the protection against corrosion of iron and steel in structures —**

## **Part 3: Sherardizing**

### **1 Scope**

This part of ISO 14713 provides guidelines and recommendations regarding the general principles of design that are appropriate for articles to be sherardized for corrosion protection.

The protection afforded by the sherardized coating to the article will depend upon the method of application of the coating, the design of the article and the specific environment to which the article is exposed. The sherardized article can be further protected by application of additional coatings (outside the scope of this part of ISO 14713), such as organic coatings (wet paints or powder coatings). When applied to sherardized articles, this combination of coatings is often known as a “duplex system”.

General guidance on this subject can be found in ISO 12944-5 and EN 13438.

The maintenance of corrosion protection in service for steel with sherardized coatings is outside the scope of this part of ISO 14713.

Specific product-related requirements (e.g. for sherardized coatings on fasteners or tubes, etc.) will take precedence over these general recommendations.

### **2 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8044, *Corrosion of metals and alloys — Basic terms and definitions*

ISO 12944-5, *Paint and varnishes — Corrosion protection of steel structures by protective paint systems — Part 5: Protective paint systems*

ISO 18265, *Metallic materials — Conversion of hardness values*

EN 13811, *Sherardizing — Zinc diffusion coatings on ferrous products — Specification*