

**Paints and varnishes - Powder organic coatings for galvanized or sherardised steel products for construction purposes**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13438:2005 sisaldab Euroopa standardi EN 13438:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 28.12.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13438:2005 consists of the English text of the European standard EN 13438:2005.</p> <p>This document is endorsed on 28.12.2005 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><b>Käsitlusala:</b> This European Standard specifies performance requirements for powder coatings applied to galvanized or sherardised steel products, for architectural (internal and external application), fencing and construction purposes.</p>	<p><b>Scope:</b> This European Standard specifies performance requirements for powder coatings applied to galvanized or sherardised steel products, for architectural (internal and external application), fencing and construction purposes.</p>
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**ICS** 25.220.60

**Võtmesõnad:**

ICS 25.220.60

English Version

**Paints and varnishes - Powder organic coatings for galvanized  
or sherardised steel products for construction purposes**

Peintures et vernis - Revêtements de poudre organique  
pour produits en acier galvanisé ou sherardisé utilisés dans  
la construction

Beschichtungsstoffe - Pulverbeschichtungen für  
feuerverzinkte oder sherardisierte Stahlerzeugnisse für  
Bauzwecke

This European Standard was approved by CEN on 8 September 2005.

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.

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 Central Secretariat has the same status as the official versions.

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



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## Foreword

This European Standard (EN 13438:2005) has been prepared by Technical Committee CEN/TC 139 "Paints and varnishes", the secretariat of which is held by DIN.

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 May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

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

## Introduction

This European Standard has been produced as a result of the growing demand for products made of powder coated hot-dip galvanized or sherardised steel. These products offer a combination of corrosion resistance and decorative appearance.

It is assumed in the drafting of this standard that the specified test methods will be applied by those who are suitably trained and supervised.

This European Standard has been written from a coating performance perspective and does not seek to set out one method of powder coating galvanized or sherardised steel products. In order to facilitate production of the best quality powder coated hot dip galvanized or sherardised articles however, experience has shown that it is important that sufficient dialogue between the client, specifier, designer, fabricator, galvanizer or sherardiser and powder coating applicator takes place at the earliest stages of the project and that where possible timescales set out for processing of the work are practical and adhered to. A guidance document dealing with these and other aspects of supply is currently under development.

## 1 Scope

This European Standard specifies performance requirements for powder coatings applied to galvanized or sherardised steel products, for architectural (internal and external application), fencing and construction purposes. Galvanized steel products can be articles batch hot dip galvanized (galvanized after fabrication) or articles consisting of continuously hot-dip galvanized sheet which is then subsequently fabricated. This standard does not apply to articles with zinc-aluminium coatings or aluminium-zinc coatings, or to continuously hot dip galvanized wire. Requirements for cleaning and pre-treatment of the galvanized or sherardised steel products prior to powder coating are also specified.

## 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.

EN 10326, *Continuously hot-dip coated strip and sheet of structural steels — Technical delivery conditions*

EN 10327, *Continuously hot-dip coated strip and sheet of low carbon steels for cold forming — Technical delivery conditions*

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

EN ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods (ISO 1461:1999)*

EN ISO 1518, *Paints and varnishes — Scratch test (ISO 1518:1992)*

EN ISO 1519, *Paints and varnishes — Bend test (cylindrical mandrel) (ISO 1519:2002)*

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

EN ISO 2409, *Paints and varnishes — Cross-cut test (ISO 2409:1992)*

EN ISO 2808, *Paints and varnishes — Determination of film thickness (ISO 2808:1997)*

EN ISO 2810, *Paints and varnishes - Natural weathering of coatings - Exposure and assessment (ISO 2810:2004)*

EN ISO 2813, *Paints and varnishes - Determination of specular gloss of non-metallic paint films at 20°, 60° and 85° (ISO 2813:1994, including Technical Corrigendum 1:1997)*

EN ISO 3231, *Paints and varnishes — Determination of resistance to humid atmospheres containing sulfur dioxide (ISO 3231:1993)*

EN ISO 3668, *Paints and varnishes — Visual comparison of the colour of paints (ISO 3668:1998)*

EN ISO 6270-1, *Paints and varnishes — Determination of resistance to humidity — Part 1: Continuous condensation (ISO 6270-1:1998)*

EN ISO 7253, *Paints and varnishes — Determination of resistance to neutral salt spray (fog) (ISO 7253:1996)*

EN ISO 8130-9, *Coating powders — Part 9: Sampling (ISO 8130-9:1992)*

EN ISO 11341:2004, *Paints and varnishes - Artificial weathering and exposure to artificial radiation - Exposure to filtered xenon-arc radiation (ISO 11341:2004)*

ISO 7724-3, *Paints and varnishes — Colorimetry — Part 3: Calculation of colour differences*

ISO 9227, *Corrosion tests in artificial atmospheres - Salt spray tests*

ISO 10474, *Steel and steel products — Inspection documents*

### 3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply.

#### 3.1

##### **finishing coat**

final coat of a coating system

[EN 971-1:1996]

#### 3.2

##### **conversion coating**

layer produced on a galvanized or sherardised steel surface by a chemical treatment

#### 3.3

##### **powder coating**

dry film obtained by application and fusing of a coating powder

#### 3.4

##### **coating powder**

solvent-free coating material in powder form which, after fusing and possible curing, gives a continuous film

#### 3.5

##### **test piece**

single item, representative of the work being processed

#### 3.6

##### **test sample**

group of test pieces

#### 3.7

##### **significant surface**

that part of the coated article on which the coating is essential for serviceability of the article

#### 3.8

##### **specifier**

person specifying the performance requirements for the coating and significant surfaces of the article

#### 3.9

##### **coating applicator**

company responsible for applying the coating powder onto a substrate

### 4 Substrate material

The substrate shall be hot dip galvanized steel in accordance with EN ISO 1461, EN 10326, EN 10327 or sherardised steel in accordance with EN 13811. If required, steel sections shall be free from surface imperfections such as die lines and laminations. Unless otherwise agreed, the preparation of the surface of