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Paints and varnishes - Powder organic coatings for hot dip galvanised or sherardised steel products for construction purposes

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/14

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English Version

**Paints and varnishes - Powder organic coatings for hot dip
galvanised or sherardised steel products for construction
purposes**

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

Beschichtungsstoffe - Pulverbeschichtungen für
feuerverzinkte oder sherardisierte Stahlerzeugnisse für
Bauzwecke

This European Standard was approved by CEN on 19 July 2013.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

Foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	7
4 Substrate material	8
5 Coating powder	8
5.1 Identification.....	8
5.2 Storage	8
5.3 Performance requirements	9
5.3.1 General	9
5.3.2 Colour	9
5.3.3 Gloss.....	9
5.3.4 Adhesion	9
5.3.5 Resistance to scratching	9
5.3.6 Resistance to deformation.....	9
5.3.7 Resistance to mortar.....	9
5.3.8 Resistance to weathering	9
5.3.9 Resistance to humidity	10
5.3.10 Resistance to sulfur dioxide.....	10
5.3.11 Permeability.....	10
5.3.12 Resistance to salt spray	10
5.4 Health and safety information	10
6 Application	11
6.1 Cleaning and pretreatment of the hot dip galvanised or sherardised substrate.....	11
6.2 Coating powder.....	11
6.3 Application of coating powder	11
6.4 Significant surfaces of coated article.....	11
6.5 Performance requirements of the powder coated article.....	11
6.5.1 General	11
6.5.2 Surface appearance	11
6.5.3 Colour	11
6.5.4 Thickness	11
6.5.5 Gloss.....	12
6.5.6 Adhesion	12
7 Certificate of conformity	12
Annex A (normative) Methods of test for coating powders	15
A.1 General	15
A.2 Sampling.....	15
A.3 Coated test panels	15
A.3.1 Material and dimensions.....	15
A.3.2 Pretreatment.....	15
A.3.3 Coating of the test panels.....	15
A.3.4 Determination of thickness.....	15
A.3.5 Appearance and conditioning	16
A.4 Test procedures on coated test panels.....	16
A.4.1 Surface	16

A.4.2	Colour	16
A.4.3	Gloss.....	16
A.4.4	Adhesion.....	16
A.4.5	Resistance to scratching	17
A.4.6	Resistance to deformation.....	17
A.4.7	Resistance to mortar.....	17
A.4.8	Resistance to weathering.....	17
A.4.9	Resistance to humidity	17
A.4.10	Resistance to sulfur dioxide	18
A.4.11	Permeability.....	18
A.4.12	Resistance to salt spray.....	18
Annex B	(informative) Guidance on cleaning and pretreatment processes	19
B.1	Cleaning.....	19
B.2	Pretreatment.....	19
B.3	Types of pretreatment.....	19
B.3.1	Conversion and drying of the conversion coating (chemical pretreatment)	19
B.3.2	Mechanical pretreatment.....	20
Annex C	(informative) Guidelines on the powder coating process.....	21
Annex D	(normative) Methods of test for powder coatings.....	22
D.1	General	22
D.2	Test piece preparation	22
D.3	Test procedures on finished articles.....	22
D.3.1	Surface appearance	22
D.3.2	Colour	22
D.3.3	Thickness	22
D.3.4	Gloss.....	22
D.3.5	Adhesion.....	22
D.4	Test procedures on test panels	23
Annex E	(informative) Guidelines on the care and protection of powder coated hot dip galvanised or sherardised steel components.....	24
E.1	Packing and handling.....	24
E.2	Tapes	24
	Bibliography.....	25

Foreword

This document (EN 13438:2013) 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 March 2014, and conflicting national standards shall be withdrawn at the latest by March 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13438:2005.

In relation to EN 13438:2005, the following main amendments have been made:

- a) the term defined as "test sample" has been removed;
- b) a new term "substrate" has been introduced;
- c) a paragraph in Clause 4 includes references to EN ISO 14713-2 and EN ISO 14713-3 to optimise design of articles sent for processing to this standard;
- d) tolerance limits on gloss requirements has been tightened slightly for gloss levels over 50 units (reduced from ± 10 units to ± 7 units) and "Table 1 — Gloss requirements" removed;
- e) Clause 6 has been edited to clarify references to "cleaning" as distinct from "preparation" or "pretreatment";
- f) reference to (old) Table 1 in 6.5.5 "Gloss" has been removed;
- g) an adhesion test on the finished powder coated article is now not mandatory (see revised 6.5.6) and if required should be specified;
- h) a new "Table 1 — Summary of tests" has been included for ease of reference, after Clause 7;
- i) the minimum thickness of coated test panels used for tests for mechanical properties has been increased from 0,3 mm to 1,0 mm (see A.3.1);
- j) reference to updated standards have been included, e.g. replacement of ISO 7724-3 with EN ISO 11664-4 (see A.4.2) and replacement of ISO 1518 with EN ISO 1518-1 (see A.4.5);
- k) Annex B has been edited to clarify references to "cleaning" and "pretreatment" and the content reduced;
- l) the possibility of an adhesion test on finished article now included in Annex D (see D.3.5);
- m) the content of Annex E has been reduced – reference has been made to EN 15773 for further information.

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

Introduction

This European Standard has been produced as a result of the growing demand for products made of powder coated hot dip galvanised 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 hot dip galvanised or sherardised steel products. Nevertheless, in order to facilitate production of the best quality powder coated hot dip galvanised or sherardised articles, experience has shown how important it is that sufficient dialogue between the client, specifier, designer, fabricator, galvaniser 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.

It is strongly recommended that the guidance document for supply of duplex coatings, EN 15773, *Industrial application of powder organic coatings to hot dip galvanized or sherardized steel articles [duplex systems] — Specifications, recommendations and guidelines*, is used in combination with this standard when specifying for duplex systems.

1 Scope

This European Standard specifies performance requirements for organic coating powders and powder organic coatings as applied to finished articles (hot dip galvanised or sherardised steel products) for construction purposes. Hot dip galvanised steel products can be articles that have been batch hot dip galvanised (hot dip galvanised after fabrication) or articles consisting of continuously hot dip galvanised sheet which is then subsequently fabricated.

This European Standard does not set out any performance requirements for the powder coating process itself. Guidance on cleaning and pretreatment of the hot dip galvanised or sherardised steel products prior to powder coating is provided.

This European Standard does not apply to articles with zinc-aluminium coatings or aluminium-zinc coatings, or to continuously hot dip galvanised wire. This standard does not apply to organic coating powders and powder organic coatings as applied to hot dip galvanised or sherardised steel products (i.e. duplex coated articles) for which there are specific standards, which might include additional requirements or requirements which are different from those of this standard.

2 Normative references

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

EN 10346, *Continuously hot-dip coated steel flat products — Technical delivery conditions*

EN 13811, *Sherardizing — 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)*

EN ISO 1518-1, *Paints and varnishes — Determination of scratch resistance — Part 1: Constant loading method (ISO 1518-1)*

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

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

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

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

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

EN ISO 2813, *Paints and varnishes — Determination of specular gloss of non-metallic paint films at 20°, 60° and 85° (ISO 2813)*

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

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

EN ISO 4618:2006, *Paints and varnishes — Terms and definitions (ISO 4618:2006)*

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

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

EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227)*

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

EN ISO 11664-4, *Colorimetry — Part 4: CIE 1976 L*a*b Colour space (ISO 11664-4)*

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

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