



# SLOVENSKI STANDARD

## SIST EN 15773:2009

01-oktober-2009

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**Industrijska uporaba praškastih organskih premazov za izdelke iz vroče galvaniziranega ali difuzijsko pocinkanega jekla [sistemi dupleks] - Specifikacije, priporočila in smernice**

Industrial application of powder organic coatings to hot dip galvanized or sherardized steel articles [duplex systems] - Specifications, recommendations and guidelines

Industrielle Pulverbeschichtung von feuerverzinkten und sherardisierten Stahlgegenständen [Duplex-Systeme] - Spezifikationen, Empfehlungen und Leitlinien

Application industrielle de revêtements en poudre organiques à des produits en acier galvanisés à chaud et shérardisés [systemes duplex] - Spécifications, recommandations et lignes directrices

**Ta slovenski standard je istoveten z: EN 15773:2009**

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**ICS:**

25.220.60      Organske prevleke      Organic coatings

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 15773**

June 2009

ICS 25.220.99

English Version

**Industrial application of powder organic coatings to hot dip  
galvanized or sherardized steel articles [duplex systems] -  
Specifications, recommendations and guidelines**

Application industrielle de revêtements en poudre  
organiques à des produits en acier galvanisés à chaud et  
shérardisés [systèmes duplex] - Spécifications,  
recommandations et lignes directrices

Industrielle Pulverbeschichtung von feuerverzinkten und  
sherardisierten Gegenständen aus Stahl [Duplex-Systeme]  
- Spezifikationen, Empfehlungen und Leitlinien

This European Standard was approved by CEN on 20 May 2009.

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 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 Management Centre has the same status as the official versions.

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## Foreword

This document (EN 15773:2009) 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 December 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

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.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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## Introduction

In order to achieve a duplex system which satisfies the many varied aesthetic and performance requirements currently in existence in the marketplace, the following aspects of the supply and application of the systems should be controllable:

- fabrication and composition of the material (Clause 5);
- the zinc coating (Clause 6);
- surface smoothing for coating (Clause 6);
- environmental conditions during storage, transport and application (Clause 6);
- the pre-treatment of the zinc surface (Clause 7);
- instructions provided by chemical pre-treatment suppliers (Clause 7), powder manufacturers (Clause 8);
- the organic coating system (Clause 8);
- packaging, storage and movement of finished products (Clause 9);
- installation (Clause 10);
- inspection (Clause 11).

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This European Standard does not incorporate the application of paint coatings according to EN ISO 12944 (parts 1 to 8) [1] when paint systems are specified. This European Standard incorporates the application of coating powders according to EN 13438 when powder coatings are specified.

Table 1 shows the relationship between this European Standard, EN 13438 and other standards relating to zinc coated articles.

**Table 1 — Standards for powder organic coatings and hot dip galvanized steel or sherardized steel**

Galvanizing or sherardizing	Powder organic coatings for galvanized or sherardized steel products	Communications and quality issues surrounding supply of duplex coated articles
EN ISO 1461 EN 10240 EN 10326 EN 10327 EN 13811	EN 13438 or specific product specification	EN 15773
<b>Good communications in place and agreements made between galvanizer or sherardizer and client regarding general quality requirements in relation to zinc coating.</b> NOTE prEN ISO 14713-2 and -3 also provide useful information on design for galvanizing and sherardizing respectively.	<b>Good communications in place and agreements made between the client and the company applying the powder organic coating regarding general quality requirements of the powder organic coating.</b>	<b>Good communications in place and agreements made between client, galvanizer or sherardizer and applicator of the powder organic coating regarding quality requirements for duplex systems in relation to quality of zinc coating, the pre-treatment and powder organic coating.</b>

**EN 15773:2009 (E)****1 Scope**

This European Standard specifies the agreements to be made between the client, the galvanizer / sherardizer, the chemical suppliers and the applicators of the pre-treatment and the powder organic coating systems (if they are not one and the same). It also specifies the quality of the galvanized or sherardized articles to which the powder organic coatings are to be applied and for the pre-treatment and powder organic coatings intended for application to the galvanized or sherardized articles.

This standard applies to the application of hot dip galvanized, sherardized and powder organic coatings by controlled industrial processes to articles consisting of or manufactured from steel. The standard applies to hot dip galvanized products, galvanized in accordance with EN ISO 1461 and EN 10240 or products sherardized in accordance with EN 13811, as well as parts of these products manufactured from continuously galvanized sheet and strip galvanized in accordance with EN 10326 or EN 10327, which, after the galvanizing and/or assembly, or sherardizing, will have a powder organic coating system applied. This standard also applies to products which have been hot dip galvanized or sherardized according to specific product standards to which powder organic systems are applied.

This standard might also be useful when supplying other organic coating systems (excluding wet paint systems).

**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 10021, *General technical delivery conditions for steel products*

EN 10130, *Cold rolled low carbon steel flat products for cold forming - Technical delivery conditions*

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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 10163-1, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections — Part 1: General requirements*

EN 10163-2, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections — Part 2: Plate and wide flats*

EN 10163-3, *Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections — Part 3: Sections*

EN 10221, *Surface quality classes for hot-rolled bars and rods — Technical delivery conditions*

EN 10240, *Internal and/or external protective coatings for steel tubes — Specification for hot dip galvanized coatings applied in automatic plants*

EN 13438, *Paints and varnishes — Powder organic coatings for galvanized or sherardized steel products for construction purposes*

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 1461:1999)*



EN ISO 5817, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections (ISO 5817:2003, corrected version:2005, including Technical Corrigendum 1:2006)*

prEN ISO 14713-1, *Guidelines and recommendations for the protection against corrosion of iron and steel in structures — Zinc coatings — Part 1: General principles of design and corrosion resistance (ISO/DIS 14713-1:2008)*

prEN ISO 14713-2, *Guidelines and recommendations for the protection against corrosion of iron and steel in structures — Zinc coatings — Part 2: Hot dip galvanizing (ISO/DIS 14713-2:2008)*

prEN ISO 14713-3, *Guidelines and recommendations for the protection against corrosion of iron and steel in structures — Zinc coatings — Part 3: Sherardizing (ISO/DIS 14713-3:2008)*

ISO 9223, *Corrosion of metals and alloys — Corrosivity of atmospheres — Classification*

### 3 Terms and definitions

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

#### 3.1

##### **applicator**

company that applies the powder organic coating

#### 3.2

##### **controlled industrial process**

controllable and reproducible process, executed in steps under controlled conditions

NOTE Often subject to a degree of automation, carried out in industrial buildings or mobile installations.

#### 3.3

##### **surface smoothing of the product**

reduction, usually by means of mechanical finishing, of roughness associated with the galvanized or sherardized surface such that when the galvanized or sherardized surface is pre-treated and coated with the powder organic coating system, no protrusions penetrate through the organic coating

#### 3.4

##### **duplex system**

organic thermosetting or thermoplastic powder and hot dip galvanized or sherardized zinc coatings on steel products

#### 3.5

##### **designer**

company / individual responsible for the design of a structure or product that will be finished with a duplex system

#### 3.6

##### **client**

company / individual that orders the duplex system

#### 3.7

##### **specifier**

company / individual that specifies the duplex system

#### 3.8

##### **sherardizer**

company that applies the zinc coating by the sherardizing process

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- 3.9 galvanizer**  
company that applies the zinc coating by the hot dip galvanizing process
- 3.10 hand dry products**  
products free of rain and condensation water in pores and on the surface
- 3.11 fabricator**  
company / individual manufacturing steel products that will be finished with a duplex system
- 3.12 powder manufacturer**  
company / individual producing the organic coating powder to be applied onto the galvanized or sherardized steel substrates to complete the duplex systems
- 3.13 transporter**  
company(ies) or individual(s) responsible for transportation of the hot dip galvanized or sherardized steelwork to the powder coating applicator and / or the transportation of the finished (duplex coated) work to site
- 3.14 installation**  
fitting of duplex coated articles on site
- 3.15 pre-treatment chemical supplier**  
company(ies) or individual(s) producing the pre-treatment chemicals to be used within the powder coating process

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**4 Ordering****4.1 General**

The client shall make sure that all of the parties involved are notified that a duplex system will be applied. This requires good communication between the client, the steel purchaser, the fabricator, the galvanizer or sherardizer, and the companies applying the pre-treatment and the powder coating.

Table 2 outlines the phases of the supply process, the requirements for communications between the parties involved at different supply stages and the requirements which apply to the various phases of the supply process.

**Table 2 — Duplex systems: supply phases, essential communication links between parties involved and appropriate specifications / further guidance reference sources**

Supply phase	Essential communication links between parties involved	Requirements / guidance
Design	Designer Client	Clause 5 - prEN ISO 14713-2 - prEN ISO 14713-3 - EN ISO 1461 - EN 13811
Order	Client Fabricator Builder Construction company Galvanizer / sherardizer Powder manufacturer Pre-treatment chemical supplier Applicator	Clause 4 - EN 10021 - EN 10130 - EN ISO 1461 - EN 10326 - EN 10327 - EN 13811 - EN 13438
Fabrication	Client Fabricator Construction company	Clause 5 - EN 10021 - EN 10163-1, -2 and -3 - EN 10221 - EN ISO 1461 - EN ISO 5817 - prEN ISO 14713-2 - prEN ISO 14713-3
Hot dip galvanizing / sherardizing	Client Galvanizer / sherardizer	Clause 6 - EN ISO 1461 - EN 10240 - EN 13811 - prEN ISO 14713-2 - prEN ISO 14713-3
Transport and storage of galvanized or sherardized articles	Client Galvanizer / sherardizer Transporter / applicator	Clause 6.3
Pre-treatment	Galvanizer / sherardizer Chemical supplier and applicator	Clause 7 - EN 13438
Organic coating	Client Galvanizer / sherardizer Applicator(s)	Clause 6.3 and Clause 8 - EN 13438 - EN ISO 1461 - EN 10240 - EN 13811
Inspection	Client Applicator and Galvanizer / sherardizer	Clause 11 - EN 13438 - EN ISO 1461 - EN 13811 - ISO 9223