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I.S. EN ISO 1461:2009

# Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods (ISO 1461:2009)

## I.S. EN ISO 1461:2009

*Incorporating amendments/corrigenda issued since publication:*

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

May 2009

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Supersedes EN ISO 1461:1999

English Version

## Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods (ISO 1461:2009)

Revêtements par galvanisation à chaud sur produits finis  
en fonte et en acier - Spécifications et méthodes d'essai  
(ISO 1461:2009)

Durch Feuerverzinken auf Stahl aufgebrachte Zinküberzüge  
(Stückverzinken) - Anforderungen und Prüfungen (ISO  
1461:2009)

This European Standard was approved by CEN on 30 April 2009.

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## Foreword

This document (EN ISO 1461:2009) 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of an identical text or by endorsement, at the latest by November 2009, and conflicting national standards shall be withdrawn at the latest by November 2009.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.

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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.

### Endorsement notice

The text of ISO 1461:2009 has been approved by CEN as a EN ISO 1461:2009 without any modification.

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I.S. EN ISO 1461:2009  
**INTERNATIONAL  
STANDARD**

**ISO  
1461**

Third edition  
2009-05-15

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**Hot dip galvanized coatings on fabricated  
iron and steel articles — Specifications  
and test methods**

*Revêtements par galvanisation à chaud sur produits finis en fonte et en  
acier — Spécifications et méthodes d'essai*



Reference number  
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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 1461 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 4, *Hot dip coatings (galvanized, etc.)*.

This third edition cancels and replaces the second edition (ISO 1461:1999), which has been technically revised. This revision reflects the experience gained in the use of ISO 1461 and includes a simplification of procedures and presentation.

Significant changes to the text include the following:

- further refining of the scope of application of the standard to exclude woven or welded mesh products that are continuously galvanized;
- adding a definition for weld seepage in Clause 3;
- adding references to the availability of secondary zinc supply;
- adding explanatory notes on coating finish;
- simplifying requirements for sampling and testing;
- adding references for the use of alternative renovation materials and for methods of adhesion testing;
- moving much informative information on the influence of the basis metal on the hot dip galvanized coatings produced and designed for galvanizing into the guidance document ISO 14713-2 [8].

# Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods

## 1 Scope

This International Standard specifies the general properties of coatings and test methods for coatings applied by dipping fabricated iron and steel articles (including certain castings) in a zinc melt (containing not more than 2 % of other metals). It does not apply to the following:

- a) sheet, wire and woven or welded mesh products that are continuously hot dip galvanized;
- b) tube and pipe that are hot dip galvanized in automatic plants;
- c) hot dip galvanized products (e.g. fasteners) for which specific standards exist and which might include additional requirements or requirements which are different from those of this International Standard.

**NOTE** Individual product standards can incorporate this International Standard for the coating by quoting its number, or can incorporate it with modifications specific to the product. Different requirements can also be made for galvanized coatings on products intended to meet specific regulatory requirements.

After-treatment/over-coating of hot dip galvanized articles is not covered by this International Standard.

## 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 752, *Zinc ingots*

ISO 1460, *Metallic coatings — Hot dip galvanized coatings on ferrous materials — Gravimetric determination of the mass per unit area*

ISO 2064, *Metallic and other inorganic coatings — Definitions and conventions concerning the measurement of thickness*

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

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

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 2859-2, *Sampling procedures for inspection by attributes — Part 2: Sampling plans indexed by limited quality (LQ) for isolated lot inspection*

ISO 2859-3, *Sampling procedures for inspection by attributes — Part 3: Skip-lot sampling procedures*

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