



SLOVENSKI STANDARD SIST EN ISO 1461:2022

01-november-2022

Nadomešča:
SIST EN ISO 1461:2009

**Prevleke na železnih in jeklenih predmetih, nanesene z vročim pocinkanjem -
Specifikacije in metode preskušanja (ISO 1461:2022)**

Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods (ISO 1461:2022)

Durch Feuerverzinken auf Stahl aufgebrachte Zinküberzüge (Stückverzinken) -
Anforderungen und Prüfungen (ISO 1461:2022)

Revêtements par galvanisation à chaud sur produits finis en fonte et en acier -
Spécifications et méthodes d'essai (ISO 1461:2022)

Ta slovenski standard je istoveten z: EN ISO 1461:2022

ICS:

25.220.40 Kovinske prevleke Metallic coatings

SIST EN ISO 1461:2022 en,fr,de

EUROPEAN STANDARD

EN ISO 1461

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2022

ICS 25.220.40

Supersedes EN ISO 1461:2009

English Version

Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods (ISO 1461:2022)

Revêtements par galvanisation à chaud sur produits finis en fonte et en acier - Spécifications et méthodes d'essai (ISO 1461:2022)

Durch Feuerverzinken auf Stahl aufgebrachte Zinküberzüge (Stückverzinken) - Anforderungen und Prüfungen (ISO 1461:2022)

This European Standard was approved by CEN on 15 September 2022.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-dadf4b88e5ab/sist-en-iso-1461-2022>



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 1461:2022](https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-dadf4b88e5ab/sist-en-iso-1461-2022)

<https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-dadf4b88e5ab/sist-en-iso-1461-2022>

European foreword

This document (EN ISO 1461:2022) 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, including for corrosion protection and corrosion testing of metals and alloys" 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 March 2023, and conflicting national standards shall be withdrawn at the latest by March 2023.

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

This document supersedes EN ISO 1461:2009.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

[https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-](https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-d4df4b88e5ab/sist-en-iso-1461-2022)

The text of ISO 1461:2022 has been approved by CEN as EN ISO 1461:2022 without any modification.

INTERNATIONAL
STANDARD

ISO
1461

Fourth edition
2022-08

**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*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 1461:2022](https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-dadf4b88e5ab/sist-en-iso-1461-2022)

[https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-
dadf4b88e5ab/sist-en-iso-1461-2022](https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-dadf4b88e5ab/sist-en-iso-1461-2022)



Reference number
ISO 1461:2022(E)

© ISO 2022

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN ISO 1461:2022

<https://standards.iteh.ai/catalog/standards/sist/db85efba-4d57-47ee-973b-dadf4b88e5ab/sist-en-iso-1461-2022>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 General requirements	3
4.1 General.....	3
4.2 Hot dip galvanizing bath.....	4
4.3 Information to be supplied by the purchaser.....	4
4.4 Safety.....	4
5 Acceptance inspection and sampling	4
6 Galvanized coating properties	4
6.1 Appearance.....	4
6.2 Thickness.....	5
6.2.1 General.....	5
6.2.2 Test methods.....	5
6.2.3 Reference areas.....	6
6.3 Renovation.....	7
6.4 Adhesion.....	7
6.5 Acceptance criteria.....	8
7 Declaration of compliance	9
Annex A (normative) Information to be supplied	10
Annex B (normative) Safety and process requirements	12
Annex C (informative) Renovation of uncoated or damaged areas	13
Annex D (informative) Determination of thickness	14
Annex E (informative) Corrosion resistance of galvanized coatings	15
Bibliography	16

ISO 1461:2022(E)

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 4, *Hot dip coatings (galvanized, etc.)*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 262, *Metallic and other inorganic coatings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 1461:2009), which has been technically revised.

The main changes are as follows:

- definitions have been added for 'galvanizer', 'after-treatment', 'additional coating', 'wet storage stain' and 'duplex system' in [Clause 3](#);
- the difficulty to remove flux residues and zinc ash when access is restricted has been recognised in [6.1](#);
- procedures for choice of reference areas have been clarified and additional requirements to avoid reference areas on certain small ancillary elements on a larger article have been added in [6.2.3](#);
- requirements for renovation of uncoated areas have been revised: the requirements for the pigment of a zinc-containing paint to conform with ISO 3549 have been removed; [Annex C](#) has been extended to include additional information on the suitability of different methods of renovation given in [6.3](#);
- all requirements related to coating thickness, including [Table 3](#) and [Table 4](#), have been placed within [6.5](#), including requirements linked to the size of the article in the control sample previously within [6.2.3](#); the lower coating thicknesses that can result in ultra-low reactive steels are recognised in new requirements for these steel types in [6.5](#);
- information on corrosion resistance of galvanized coatings has been updated, including the reference to ISO 9224 for longer-term corrosion resistance in [Annex E](#).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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

1 Scope

This document specifies the general properties of hot dip galvanized coatings and test methods for hot dip galvanized coatings applied by dipping fabricated iron and steel articles (including certain castings) in a zinc melt (containing not more than 2 % of other metals). This document 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 can include additional requirements or requirements which are different from those of this document.

NOTE Individual product standards can incorporate this document for the galvanized 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.

This document does not apply to after-treatment or additional coating of hot dip galvanized articles.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 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 limiting quality (LQ) for isolated lot inspection*

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

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

ISO 14713-2:2019, *Zinc coatings — Guidelines and recommendations for the protection against corrosion of iron and steel in structures — Part 2: Hot dip galvanizing*

EN 1179, *Zinc and zinc alloys — Primary zinc*

EN 13283, *Zinc and zinc alloys — Secondary zinc*