



SLOVENSKI STANDARD
SIST EN ISO 10683:2014

01-september-2014

Nadomešča:
SIST EN ISO 10683:2002

Vezni elementi - Cinkova lamelna prevleka, ki ni izdelana z elektrolizo (ISO 10683:2014)

Fasteners - Non-electrolytically applied zinc flake coatings (ISO 10683:2014)

Verbindungselemente - Nichtelektrolytisch aufgebrachte Zinklamellenüberzüge (ISO 10683:2014)

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Éléments de fixation - Revêtements non électrolytiques de de zinc lamellaire (ISO 10683:2014)

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Ta slovenski standard je istoveten z: EN ISO 10683:2014

ICS:

21.060.01	Vezni elementi na splošno	Fasteners in general
25.220.40	Kovinske prevleke	Metallic coatings

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EUROPEAN STANDARD

EN ISO 10683

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2014

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Fasteners - Non-electrolytically applied zinc flake coatings (ISO 10683:2014)

Fixations - Revêtements non électrolytiques de zinc lamellaire (ISO 10683:2014)

Verbindungselemente - Nichtelektrolytisch aufgebrachte Zinklamellenüberzüge (ISO 10683:2014)

This European Standard was approved by CEN on 17 April 2014.

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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.

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Foreword

This document (EN ISO 10683:2014) has been prepared by Technical Committee ISO/TC 2 "Fasteners" in collaboration with Technical Committee CEN/TC 185 "Fasteners" 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of an identical text or by endorsement, at the latest by November 2014, and conflicting national standards shall be withdrawn at the latest by November 2014.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.

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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, 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.

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INTERNATIONAL
STANDARD

ISO
10683

Second edition
2014-05-15

**Fasteners — Non-electrolytically
applied zinc flake coatings**

Fixations — Revêtements non électrolytiques de zinc lamellaire

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ISO 10683:2014(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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 2, *Fasteners*, SC 14, *Surface coatings*.

This second edition cancels and replaces the first edition (ISO 10683:2000). The main technical changes are the following:

- wider application to all types of fasteners and all parties involved, see Introduction, [Clause 1](#), [4.1](#), [4.3](#), [Clause 7](#) and [Annex A](#);
- full description of zinc flake coating systems, see [4.1](#), [4.2](#) and [A.1.2](#);
- definitions related to coatings for fasteners moved to the new standard ISO 1891-2;
- detailed specification in relation with hexavalent chromium;
- detailed specification concerning pre-treatment in relation with internal hydrogen embrittlement, see [4.4](#);
- precedence of corrosion resistance over thickness, see [5.2](#) and [5.3](#);
- extended range of properties for coatings and related test methods (including Kesternich test, thickness and weight determination, torque/tension relationship, determination of hexavalent chromium), see [5.3](#), [7.3](#), [7.7](#), [7.8](#) and [A.2](#);
- consideration related to bulk handling, automatic processes, storage and transport, see [5.4](#) and [A.4](#);
- alternatives for gaugeability and assemblability/mountability, see [6.2.2](#);
- revised arrangement of tests to be carried out for each lot, for in-process control or when specified, see [Clause 8](#);
- revised designation for coating systems and addition of labelling, see [Clause 9](#);
- consideration related to design aspects and assembly of coated fasteners, see new [Annex A](#);

- detailed specification for coating thickness and thread clearance for ISO metric threads, moved to new [Annex B](#);
- precise control of corrosivity for the salt spray cabinet for coated fasteners, see new [Annex C](#).

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ISO 10683:2014(E)**Introduction**

The revision of ISO 10683:2000 was made in order to define the relevant requirements on zinc flake coated fasteners (coating systems with and without hexavalent chromium) for all parties involved in the fastener field, i.e. chemical suppliers, coaters, fastener manufacturers, distributors and end users. It covers all types of fasteners, i.e. fasteners with ISO metric thread, fasteners with non-ISO metric thread (including thread forming, ASME inch 60° screw thread, etc.) and non-threaded fasteners (including washers, pins, clips, etc.). It also provides basic advice for the design and use of coated fasteners in assembly.

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Fasteners — Non-electrolytically applied zinc flake coatings

1 Scope

This International Standard specifies requirements for non-electrolytically applied zinc flake coatings for steel fasteners. It applies to coatings:

- with or without hexavalent chromium;
- with or without top coat;
- with or without lubricant (integral lubricant and/or subsequently added lubricant).

National regulations for the restriction or prohibition of certain chemical elements should be taken into account in the countries or regions concerned.

It applies to bolts, screws, studs and nuts with ISO metric thread, to fasteners with non-ISO metric thread, and to non-threaded fasteners such as washers, pins, clips, etc.

NOTE Coatings in accordance with this International Standard are especially used for high strength fasteners ($\geq 1\ 000$ MPa) to avoid risk of internal hydrogen embrittlement (see 4.4).

Information for design and assembly of coated fasteners is given in [Annex A](#).

This International Standard does not specify requirements for such fastener properties as weldability or paintability. It does not apply to mechanically applied zinc coatings.

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.

ISO 1463, *Metallic and oxide coatings — Measurement of coating thickness — Microscopical method*

ISO 1502, *ISO general-purpose metric screw threads — Gauges and gauging*

ISO 1891-2, *Fasteners — Terminology — Part 2: Vocabulary and definitions for coatings*¹⁾

ISO 3269, *Fasteners — Acceptance inspection*

ISO 3613:2010, *Metallic and other inorganic coatings — Chromate conversion coatings on zinc, cadmium, aluminium-zinc alloys and zinc-aluminium alloys — Test methods*

ISO 6988, *Metallic and other non organic coatings — Sulfur dioxide test with general condensation of moisture*

ISO 8991, *Designation system for fasteners*

ISO 9227:2012, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 16047, *Fasteners — Torque/clamp force testing*

1) To be published.