



BSI Standards Publication

Fasteners - Non-electrolytically applied zinc flake coating systems

National foreword

This British Standard is the UK implementation of EN ISO 10683:2018. It is identical to ISO 10683:2018. It supersedes BS EN ISO 10683:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee FME/9, Fasteners.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Fasteners - Non-electrolytically applied zinc flake coatings (ISO/FDIS 10683:2018)

Fixations - Revêtements non électrolytiques
de zinc lamellaire (ISO/FDIS 10683:2018)

Verbindungselemente - Nichtelektrolytisch
aufgebrachte Zinklamellenüberzüge
(ISO/FDIS 10683:2018)

This European Standard was approved by CEN on 10 August 2018.

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European foreword

This document (EN ISO 10683:2018) 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 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of an identical text or by endorsement, at the latest by March 2019, and conflicting national standards shall be withdrawn at the latest by March 2019.

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 10683:2014.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 10683:2018 has been approved by CEN as EN ISO 10683:2018 without any modification.

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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.

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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, SC 14, *Surface coatings*.

This third edition cancels and replaces the second edition (ISO 10683:2014), which has been technically revised. The main changes compared to the previous edition are as follows:

- the normative references have been updated;
- the restriction of gauging to external threads in the 2nd paragraph of [6.2.2](#) has been removed;
- the last column in [Table B.2](#) with maximum clearance for tolerance position e has been removed;
- [Annex C](#) has been revised completely.

Fasteners - Non-electrolytically applied zinc flake coating systems

1 Scope

This document specifies requirements for non-electrolytically applied zinc flake coating systems for steel fasteners. It is applicable to coatings:

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

It is applicable 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.

This document does not specify requirements for such fastener properties as weldability or paintability. It is not applicable to mechanically applied zinc coatings.

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

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

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 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*

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, *Corrosion tests in artificial atmospheres — Salt spray tests*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1891-2 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at www.electropedia.org