

Fasteners — Hot dip galvanized coatings

ICS 21.060.01; 25.220.40

Confirmed May 2008

National foreword

This British Standard is the UK implementation of EN ISO 10684:2004. It is identical with ISO 10684:2004, incorporating corrigendum July 2008.

The UK participation in its preparation was entrusted by Technical Committee FME/9, Nuts, bolts and accessories/Steering committee, to Subcommittee FME/9/1, Material.

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

The UK as a member of CEN, is obliged to publish EN ISO 10684:2004 as a British Standard. However, attention is drawn to the fact that during the development of this European Standard, the UK consistently voted against its approval as a European Standard for the following reasons:

- 1. Clause 4.1 gives a silicon and phosphorous composition range (0.03 % to 0.13 %) where galvanizing at high temperature is recommended. The UK committee believe that galvanizing at normal temperature can also be applied to this range if adequate precautions are taken.
- 2. The UK committee disagree with the specified bath temperature range (455 to 480 °C) in clause 5.5. The operating temperature of galvanizing baths in the UK is feasible at 440 to 465 °C.
- 3. Currently, there is no widely accepted adhesion test available at national or international level due to a lack of reproducibility. The issue regarding reproducibility would also apply to the test in Annex E.
- 4. The committee believe that the maximum coating thicknesses in Tables 1 and 2 are too restrictive. It is quite possible that for any particular batch of material, coating thicknesses outside the ranges allowed can be produced.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2006

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Amendments/corrigenda issued since publication

Date	Comments
30 November 2009	Implementation of ISO corrigendum July 2008. Table 1, column 12, for Pitch 5,5, 398 changed to 298

English version

Fasteners - Hot dip galvanized coatings (ISO 10684:2004)

Éléments de fixation - Revêtements de galvanisation à chaud (ISO 10684:2004)

Verbindungselemente - Feuerverzinkung (ISO 10684:2004)

This European Standard was approved by CEN on 17 June 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN ISO 10684:2004) has been prepared by Technical Committee ISO/TC 2 "Fasteners" in collaboration with Technical Committee CEN/TC 185 "Threaded and non-threaded mechanical fasteners and accessories", 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 January 2005, and conflicting national standards shall be withdrawn at the latest by January 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 10684:2004 has been approved by CEN as EN ISO 10684:2004 without any modifications.

BS EN ISO 10684:2004
EN ISO 10684:2004

INTERNATIONAL STANDARD

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Fasteners — Hot dip galvanized coatings

Éléments de fixation — Revêtements de galvanisation à chaud



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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 10684 was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 1, *Mechanical properties of fasteners*.

Fasteners — Hot dip galvanized coatings

1 Scope

This International Standard specifies material, process, dimensional and some performance requirements for hot dip spun galvanized coatings applied to coarse threaded steel fasteners from M8 up to and including M64 and for property classes up to and including 10.9 for bolts, screws and studs and 12 for nuts. It is not recommended to hot dip galvanize threaded fasteners in diameters smaller than M8 and/or with pitches below 1,25 mm.

NOTE Attention is drawn to the fact that the proof loads and stresses under proof load of oversize tapped nuts with threads M8 and M10 and the ultimate tensile loads and proof loads of undersize threaded bolts and screws with threads M8 and M10 are reduced as compared to the values specified in ISO 898-2 and ISO 898-1 respectively and are specified in Annex A.

It primarily concerns the spun hot dip galvanizing of threaded steel fasteners, but it may also be applied to other threaded steel parts.

The specifications given in this International Standard may also be applied to non-threaded steel parts such as washers.

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 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs*

ISO 898-2, *Mechanical properties of fasteners — Part 2: Nuts with specified proof load values — Coarse thread*

ISO 965-1, *ISO general purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

ISO 965-2, *ISO general purpose metric screw threads — Tolerances — Part 2: Limits of sizes for general purpose external and internal screw threads — Medium quality*

ISO 965-3, *ISO general purpose metric screw threads — Tolerances — Part 3: Deviations for constructional screw threads*

ISO 965-4, *ISO general purpose metric screw threads — Tolerances — Part 4: Limits of sizes for hot-dip galvanized external screw threads to mate with internal screw threads tapped with tolerance position H or G after galvanizing*

ISO 965-5, *ISO general purpose metric screw threads — Tolerances — Part 5: Limits of sizes for internal screw threads to mate with hot-dip galvanized external screw threads with maximum size of tolerance position h before galvanizing*