Fasteners - Hot dip galvanized coatings

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 10684:2004 sisaldab Euroopa standardi EN ISO 10684:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 26.10.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 10684:2004 consists of the English text of the European standard EN ISO 10684:2004. This document is endorsed on 26.10.2004 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: 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.	**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.

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Võtmesõnad:

EUROPEAN STANDARD
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EN ISO 10684

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English version

Fasteners
Hot dip galvanized coatings
(ISO 10684 : 2004)

Eléments de fixation – Revêtements de galvanisation à chaud (ISO 10684 : 2004)

Verbindungselemente – Feuerverzinkung (ISO 10684 : 2004)

This European Standard was approved by CEN on 2004-06-17.

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 Management Centre or to any CEN member.

The European Standards exist 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 Management Centre has the same status as the official versions.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Management Centre: rue de Stassart 36, B-1050 Brussels

Ref. No. EN ISO 10684 : 2004 E

Foreword

International Standard

ISO 10684 : 2004 Fasteners – Hot dip galvanized coatings,

which was prepared by ISO/TC 2 ‘Fasteners’ of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 185 ‘Threaded and non-threaded mechanical fasteners and accessories’, the Secretariat of which is held by DIN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by January 2005 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

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

Endorsement notice

The text of the International Standard ISO 10684 : 2004 was approved by CEN as a European Standard without any modification.

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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*

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

ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods*

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 8991, *Designation system for fasteners*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2064 (in particular, the definitions of significant surface, measuring area, local thickness, minimum local thickness and average thickness) and the following apply.

3.1
batch
quantity of identical parts cleaned, pickled, fluxed and galvanized together at one time in a galvanizing basket

3.2
production lot
batches of parts originating from the same manufacturing lot, processed continuously through cleaning, pickling, fluxing, dipping in molten zinc and spun in a centrifuge without any change in temperature and concentration of the constituents of the process

3.3
batch average thickness
calculated average thickness of a coating as if it was uniformly distributed over the surface of the parts of the batch

3.4
baking
process of heating parts for a definite time at a given temperature in order to minimize the risk of hydrogen embrittlement

3.5
stress relief
process of heating parts for a definite time at a given temperature in order to relieve stress induced by work hardening

3.6
hot dip galvanizing of fasteners
process whereby steel fasteners are zinc coated by immersion in a bath of molten zinc, resulting in the formation of a zinc-iron alloy coating or a zinc-iron alloy coating plus a zinc coating at the surface of the fastener

NOTE This process involves the removal of excess zinc by spinning the parts in a centrifuge or by an equivalent method.