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Fasteners - Prevailing torque hexagon nuts - Thin nuts (with non-metallic insert) (ISO 10511:2025)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/25

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EN ISO 10511

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English Version

Fasteners - Prevailing torque hexagon nuts - Thin nuts (with non-metallic insert) (ISO 10511:2025)

Fixations - Écrous hexagonaux autofreinés - Écrous bas (à anneau non métallique) (ISO 10511:2025)

Verbindungselemente - Sechskantmuttern mit Klemmteil - Niedrige Muttern (mit nichtmetallischem Einsatz) (ISO 10511:2025)

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN ISO 10511:2025 E

Contents

Page

European foreword..... 3

European foreword

This document (EN ISO 10511:2025) 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of an identical text or by endorsement, at the latest by December 2025, and conflicting national standards shall be withdrawn at the latest by December 2025.

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.

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Endorsement notice

The text of ISO 10511:2025 has been approved by CEN as EN ISO 10511:2025 without any modification.

International Standard

ISO 10511

Fasteners — Prevailing torque hexagon nuts — Thin nuts (with non-metallic insert)

Fixations — Écrous hexagonaux autofreinés — Écrous bas (à anneau non métallique)

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Contents

Page

Foreword ..... **iv**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **2**

4 Dimensions **2**

5 Requirements and reference International Standards **4**

6 Marking and labelling **5**

6.1 Marking on product 5

6.2 Labelling on package 5

7 Designation **5**

Annex A (normative) **Thin nuts in steel and stainless steel with *D* < M5 not included in ISO 898-2 and ISO 3506-2** **6**

Bibliography **9**

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 document 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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This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 12, *Fasteners with metric internal thread,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 185, *Fasteners*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 10511:2012) which has been technically revised.

The main changes are as follows:

— the design principles of these nuts have been clarified in Scope (see Note);

— the use of thin nuts and a warning in relation to lower stripping resistance have been added in Scope;

— nuts with D < M5 (not included in ISO 898-2 and ISO 3506-2) have been dealt with in Annex A;

— for steel nuts, quenching and tempering conditions have been specified in Clause 5 in accordance with ISO 898-2 (see Table 3);

— stainless steel nuts have been added in accordance with ISO 3506-2;

— M7, M18, M22, M27, M33 and M39 have been added;

— the countersink angle θ has been improved from 90° – 120° to 110° – 120°;

— $d_{a,max}$ and $d_{w,min}$ have been specified with two decimal places;

— $d_{w,min}$ for sizes $D \leq$ M5 has been changed from s_{min} – IT16 to s_{min} – IT15 in order to have a larger bearing surface area and thus less contact pressure;

— h_{max} for M20 and M36 has been increased so that regular, high and thin nuts have an identical room for the prevailing torque feature ($h_{max} - m_{min}$) to accommodate the non-metallic insert; h_{min} has therefore been increased in accordance with the specified tolerance (see Table 2);

— specifications for marking and labelling have been added as Clause 6.

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.

International Standard **ISO 10511:2025(en)**

Fasteners — Prevailing torque hexagon nuts — Thin nuts (with non-metallic insert)

1 Scope

This document specifies the characteristics of prevailing torque hexagon thin nuts (with non-metallic insert), in steel and stainless steel, with metric coarse pitch thread M3 to M39, and with product grades A and B.

NOTE These nuts are designed with an overall height equal to m_{min} (as specified in ISO 898-2 and ISO 4035 for style 0) plus the prevailing torque feature. The height of the prevailing torque feature ($h_{max} - m_{min}$) for the non-metallic insert is identical for regular, high and thin nuts for a given diameter.

Nuts with sizes D < M5 and design principles in accordance with style 0 are specified in Annex A.

WARNING — Thin nuts (style 0) have a reduced loadability compared to regular or high nuts, they are not designed to provide resistance to thread stripping (see ISO 898-2).

If in certain cases other specifications are requested, stainless steel grades and property classes can be selected from ISO 3506-2.

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 225, *Fasteners — Bolts, screws, studs and nuts — Symbols and descriptions of dimensions*

ISO 898-2, *Fasteners — Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified property classes*

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

ISO 1891-4, *Fasteners — Vocabulary — Part 4: Control, inspection, delivery, acceptance and quality*

ISO 2320, *Fasteners — Prevailing torque steel nuts — Functional properties*

ISO 3269, *Fasteners — Acceptance inspection*

ISO 3506-2, *Fasteners — Mechanical properties of corrosion-resistant stainless steel fasteners — Part 2: Nuts with specified grades and property classes*

ISO 4042, *Fasteners — Electroplated coating systems*

ISO 4759-1, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*

ISO 6157-2, *Fasteners — Surface discontinuities — Part 2: Nuts*

ISO 8991, *Designation system for fasteners*

ISO 8992, *Fasteners — General requirements for bolts, screws, studs and nuts*

ISO 10683, *Fasteners — Non-electrolytically applied zinc flake coating systems*