



SLOVENSKI STANDARD SIST EN ISO 2320:2016

01-marec-2016

Nadomešča:
SIST EN ISO 2320:2009

Vezni elementi - Jeklene samovarovalne matice - Mehanske in funkcionalne lastnosti (ISO 2320:2015)

Fasteners - Prevailing torque type steel nuts - Mechanical and performance properties (ISO 2320:2015)

Mechanische Verbindungselemente - Muttern aus Stahl mit Klemmteil - Mechanische und funktionelle Eigenschaften (ISO 2320:2015)

Fixations - Écrous autofreinés en acier - Caractéristiques mécaniques et performances (ISO 2320:2015)

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Ta slovenski standard je istoveten z: **EN ISO 2320:2015**

ICS:

21.060.20 Matice Nuts

SIST EN ISO 2320:2016 en,fr,de

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EUROPEAN STANDARD

EN ISO 2320

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2015

ICS 21.060.20

Supersedes EN ISO 2320:2008

English Version

Fasteners - Prevailing torque steel nuts - Functional properties (ISO 2320:2015)

Fixations - Écrous autofreinés en acier -
Caractéristiques fonctionnelles (ISO 2320:2015)

Mechanische Verbindungselemente - Muttern aus Stahl
mit Klemmteil - Mechanische und funktionelle
Eigenschaften (ISO 2320:2015)

This European Standard was approved by CEN on 17 October 2015.

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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.

CEN members are the national standards bodies of 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 United Kingdom.



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European foreword

This document (EN ISO 2320:2015) 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of an identical text or by endorsement, at the latest by June 2016, and conflicting national standards shall be withdrawn at the latest by June 2016.

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.

This document supersedes EN ISO 2320:2008.

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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Endorsement notice

The text of ISO 2320:2015 has been approved by CEN as EN ISO 2320:2015 without any modification.

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INTERNATIONAL
STANDARD

ISO
2320

Fifth edition
2015-12-01

**Fasteners — Prevailing torque steel
nuts — Functional properties**

*Fixations — Écrous autofreinés en acier — Caractéristiques
fonctionnelles*

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Reference number
ISO 2320:2015(E)

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ISO 2320:2015(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*, Subcommittee SC 12, *Fasteners with metric internal thread*.

SIST EN ISO 2320:2016

This fifth edition cancels and replaces the fourth edition (ISO 2320:2008), which has been technically revised. The following changes have been made:

- property class 9 has been deleted;
- prevailing torques for nuts M3 and M4 have been moved to [Annex C](#);
- in the test fixture, the thread protrusion through the prevailing torque feature has been changed to 3 to 5 pitches;
- the reference surface condition for the test bolt has been specified in accordance with ISO 16047 (plain surface, uncoated and degreased, unless otherwise agreed);
- the determination of the prevailing-off torque has been changed from the upper value to the minimum value (new point 5 in [Figure 2](#)), which changes the acceptance conditions;
- other editorial revisions.

Fasteners — Prevailing torque steel nuts — Functional properties

1 Scope

This International Standard specifies the functional properties for prevailing torque steel nuts when tested at an ambient temperature range of +10 °C to +35 °C. It includes a combined test method to determine the prevailing torque properties and the torque/clamp force properties at the same time.

It applies to prevailing torque all metal type nuts and prevailing torque non-metallic insert type nuts:

- with triangular ISO thread in accordance with ISO 68-1;
- with diameter/pitch combination in accordance with ISO 261 and ISO 262;
- with coarse pitch thread M5 to M39 or with fine pitch thread M8 × 1 to M39 × 3;
- with thread tolerances in accordance with ISO 965-2;
- with mechanical properties in accordance with ISO 898-2;

Prevailing torque values specified in this standard are based on laboratory test conditions.

NOTE 1 Actual prevailing torques in practical application can vary.

NOTE 2 All metal type nuts conforming to the requirements of this International Standard are used in applications ranging from -50 °C to +150 °C. <https://standards.iteh.ai/catalog/standards/sist/a9cd6e60-3942-410a-855b->

NOTE 3 Non-metallic insert type nuts conforming to the requirements of this International Standard are used in applications ranging from -50 °C to +120 °C.

WARNING — Temperatures outside the ambient temperature range can influence the functional properties (torque/clamp force and prevailing torque properties), see [Annex A](#).

2 Normative references

The following referenced 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 273, *Fasteners — Clearance holes for bolts and screws*

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread*

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

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 16047:2005, *Fasteners — Torque/clamp force testing*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16047 and the following apply.

ISO 2320:2015(E)

3.1

prevailing torque nut

nut which is not free-running on a mating thread by virtue of a self-contained prevailing torque feature, and which provides resistance to rotation independent of clamping or compression forces

3.2

prevailing torque developed by the nut

torque necessary to rotate the nut on its mating externally threaded component and without clamp force

3.3

prevailing-on torque

torque to rotate the nut on its mating externally threaded component with the torque measured while the nut is in motion and without clamp force

3.4

prevailing-off torque

torque to rotate after backing off the nut until the removal of the clamp force in the following 360° rotation of the nut

3.5

prevailing torque all metal type nut

nut which has a one piece or a multiple piece metal construction and derives its prevailing torque characteristics from a controlled distortion of the nut thread and/or body and/or from metallic insert(s)

3.6

prevailing torque non-metallic insert type nut

nut which has a multiple piece construction and derives its prevailing torque characteristics from insert(s) of non-metallic material retained in the nut

3.7

seating point

point in the tightening process where clamp force first appears

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4 Symbols

For the purpose of this International Standard, the following symbols apply together with those defined in ISO 16047.

D	nominal diameter, in millimetre
d_4	diameter of the hole of the fixture, in millimetre
F_p	proof load, in newton
F_{65}	lower load limit for the evaluation of the coefficient of total friction at 65 % of F_p , in newton
F_{75}	upper load limit for the evaluation of the coefficient of total friction at 75 % of F_p , in newton
F_{80}	test clamp force (shut-down force for the tightening process) at 80 % of F_p , in newton
P	pitch of the thread, in millimetre
T_{FV}	prevailing-on torque, in newton metre
T_{Fd}	prevailing-off torque, in newton metre
T_{65}	lower torque limit for the evaluation of the coefficient of total friction at F_{65} , in newton metre
T_{75}	upper torque limit for the evaluation of the coefficient of total friction at F_{75} , in newton metre