

This is a preview of "BS EN ISO 2320:2015". [Click here to purchase the full version from the ANSI store.](#)

**BS EN ISO 2320:2015**



**BSI Standards Publication**

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

**bsi.**

...making excellence a habit.™

This is a preview of "BS EN ISO 2320:2015". [Click here to purchase the full version from the ANSI store.](#)

This British Standard is the UK implementation of EN ISO 2320:2015. It supersedes BS EN ISO 2320:2008 which is withdrawn.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.

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

© The British Standards Institution 2016.  
Published by BSI Standards Limited 2016

ISBN 978 0 580 86178 9

ICS 21.060.20

**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 January 2016.

**Amendments/corrigenda issued since publication**

| Date | Text affected |
|------|---------------|
|------|---------------|

---

This is a preview of "BS EN ISO 2320:2015". [Click here to purchase the full version from the ANSI store.](#)

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.

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 CEN-CENELEC Management Centre 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 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.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

This is a preview of "BS EN ISO 2320:2015". [Click here to purchase the full version from the ANSI store.](#)

## 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.

## Endorsement notice

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

This is a preview of "BS EN ISO 2320:2015". Click here to purchase the full version from the ANSI store.

## Contents

|  | Page      |
|--|-----------|
| <b>Foreword</b> .....  | <b>iv</b> |
| <b>1 Scope</b> .....   | <b>1</b>  |
| <b>2 Normative references</b> .....  | <b>1</b>  |
| <b>3 Terms and definitions</b> .....   | <b>1</b>  |
| <b>4 Symbols</b> .....   | <b>2</b>  |
| <b>5 Thread</b> .....  | <b>3</b>  |
| <b>6 Lubrication</b> .....   | <b>3</b>  |
| <b>7 Mechanical properties of prevailing torque nuts</b> .....   | <b>3</b>  |
| <b>8 Functional requirements for prevailing torque properties</b> .....  | <b>3</b>  |
| <b>9 Test method</b> .....   | <b>11</b> |
| 9.1 General .....  | 11        |
| 9.2 Proof load test .....  | 11        |
| 9.3 Prevailing torque test .....   | 11        |
| 9.3.1 General .....  | 11        |
| 9.3.2 Test apparatus .....   | 12        |
| 9.3.3 Test parts .....   | 12        |
| 9.3.4 Test procedure .....   | 13        |
| 9.3.5 Test report .....  | 15        |
| <b>Annex A (normative) Temperature influence on prevailing torques of nuts with non-metallic insert</b> .....                                | <b>16</b> |
| <b>Annex B (informative) Principles for the evaluation of the total coefficient of friction, <math>\mu_{\text{tot}}</math></b> .....         | <b>17</b> |
| <b>Annex C (informative) Test clamp force and prevailing torques for prevailing torque nuts M3 and M4 in property classes 8 and 10</b> ..... | <b>18</b> |
| <b>Bibliography</b> .....  | <b>20</b> |

This is a preview of "BS EN ISO 2320:2015". [Click here to purchase the full version from the ANSI store.](#)

## 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](http://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](http://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*.

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.

This is a preview of "BS EN ISO 2320:2015". Click here to purchase the full version from the ANSI store.

# 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.

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.