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Fasteners — Prevailing torque steel nuts — Functional properties

Fixations — Écrous autofreinés en acier — Caractéristiques fonctionnelles

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Contents

Page

Foreword ..... **iv**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Symbols **2**
5 Thread **3**
6 Lubrication **3**
7 Mechanical properties of prevailing torque nuts **3**
8 Functional requirements for prevailing torque properties **3**
9 Test method **11**
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
Annex A (normative) **Temperature influence on prevailing torques of nuts with non-metallic insert** **16**
Annex B (informative) **Principles for the evaluation of the total coefficient of friction, μ_{tot}** **17**
Annex C (informative) **Test clamp force and prevailing torques for prevailing torque nuts M3 and M4 in property classes 8 and 10** **18**
Bibliography **20**

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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.

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).

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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.

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Fasteners — Prevailing torque steel nuts — Functional properties

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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.

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