
**Fasteners — Mechanical properties
of corrosion-resistant stainless steel
fasteners —**

**Part 2:
Nuts with specified grades and
property classes**

*Fixations — Caractéristiques mécaniques des fixations en acier
inoxydable résistant à la corrosion —*

Partie 2: Écrous de grades et classes de qualité spécifiés

ISO 3506-2:2020

<https://standards.iteh.ai/catalog/standards/iso/e971b18b-a865-40b0-84db-e89d87f2c2e1/iso-3506-2-2020>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 3506-2:2020

<https://standards.iteh.ai/catalog/standards/iso/e971b18b-a865-40b0-84db-e89d87f2c2e1/iso-3506-2-2020>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	v
Introduction	vii
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
4 Symbols	3
5 Designation systems	4
5.1 Designation of nut styles	4
5.2 Designation system for stainless steel grades and property classes	4
5.2.1 General	4
5.2.2 Designation of stainless steel grades (first block)	5
5.2.3 Designation of property classes (second block) for regular nuts (style 1) and high nuts (style 2)	6
5.2.4 Designation of property classes (second block) for thin nuts (style 0)	6
6 Design of bolt and nut assemblies	6
7 Materials	7
7.1 Chemical composition	7
7.2 Heat treatment for martensitic stainless steel nuts	8
7.3 Finish	9
7.4 Corrosion resistance	9
8 Mechanical and physical properties	9
9 Inspection	14
9.1 Manufacturer's inspection	14
9.2 Supplier's inspection	14
9.3 Purchaser's inspection	15
9.4 Delivery of test results	15
10 Test methods	15
10.1 Proof load test	15
10.1.1 General	15
10.1.2 Applicability	15
10.1.3 Apparatus	15
10.1.4 Testing device	15
10.1.5 Test procedure	17
10.1.6 Addition to test procedure for prevailing torque nuts	17
10.1.7 Test results and requirements	17
10.2 Hardness test	18
10.2.1 General	18
10.2.2 Test procedure	18
10.2.3 Test results and requirements	19
11 Nut marking and labelling	19
11.1 Nut marking	19
11.1.1 General requirements for marking	19
11.1.2 Marking of property class for nuts with full loadability (regular and high nuts)	19
11.1.3 Marking of property class for nuts with reduced loadability (thin nuts)	20
11.1.4 Additional marking	20
11.2 Manufacturer's identification mark	20
11.3 Marking on the nuts	20
11.3.1 Hexagon nuts	20
11.3.2 Other types of nuts	22
11.3.3 Left-hand thread marking	22

11.4 Marking of the packages (labelling)	22
Annex A (informative) Design principles of stainless steel nuts	23
Annex B (normative) Thread dimensions of the test mandrel for proof load	25
Bibliography	27

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 3506-2:2020](https://standards.iteh.ai/catalog/standards/iso/e971b18b-a865-40b0-84db-e89d87f2c2e1/iso-3506-2-2020)

<https://standards.iteh.ai/catalog/standards/iso/e971b18b-a865-40b0-84db-e89d87f2c2e1/iso-3506-2-2020>

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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 2, *Fasteners*.

This third edition cancels and replaces the second edition (ISO 3506-2:2009) which has been technically revised.

The main changes compared to the previous edition are as follows:

- annexes common to several parts of the ISO 3506 series have been withdrawn from this document and are now included in a new document (ISO 3506-6);
- duplex (austenitic-ferritic) stainless steels for property classes 70, 80 and 100 have been added (see [Figure 1](#));
- property class 100 for austenitic stainless steel grades as well as grade A8 have been added (see [Figure 1](#));
- information for nut styles (see [5.1](#)) has been added;
- design of stainless steel bolt and nut assemblies (see [Clause 6](#)), and design principles of stainless steel nuts (see [Annex A](#)) have been added;
- finish (see [7.3](#)) has been improved;
- calculated proof load values (see [Tables 5 to 8](#)) and rounding rules have been added;
- requirements and guidance for inspection procedures (see [Clause 9](#)) have been added;
- thread dimensions of the test mandrel for proof load (see [Annex B](#)) have been added;
- operational temperature ranges (see [Clause 1](#)) have been clarified;
- test methods for proof load and hardness have been improved (see [Clause 10](#));