NSAI Standards

Irish Standard
I.S. EN ISO 3506-3:2009

Mechanical properties of corrosion-resistant stainless steel fasteners - Part 3: Set screws and similar fasteners not under tensile stress (ISO 3506-3:2009)

I.S. EN ISO 3506-3:2009

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NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W **NSAI.ie**

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

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English Version

Mechanical properties of corrosion-resistant stainless steel fasteners - Part 3: Set screws and similar fasteners not under tensile stress (ISO 3506-3:2009)

Caractéristiques mécaniques des éléments de fixation en acier inoxydable résistant à la corrosion - Partie 3: Vis sans tête et éléments de fixation similaires non soumis à des contraintes de traction (ISO 3506-3:2009)

Mechanische Eigenschaften von Verbindungselementen aus nichtrostenden Stählen - Teil 3: Gewindestifte und ähnliche nicht auf Zug beanspruchte Verbindungselemente (ISO 3506-3:2009)

This European Standard was approved by CEN on 24 October 2009.

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

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Foreword

This document (EN ISO 3506-3:2009) 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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.

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 3506-3:1997.

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Endorsement notice

The text of ISO 3506-3:2009 has been approved by CEN as a EN ISO 3506-3:2009 without any modification.

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I.S. EN ISO 3506-3:2009

INTERNATIONAL STANDARD

ISO 3506-3

Second edition
2009-11-15

Mechanical properties of corrosion-resistant stainless steel fasteners —

Part 3: Set screws and similar fasteners not under tensile stress

Caractéristiques mécaniques des éléments de fixation en acier inoxydable résistant à la corrosion —

Partie 3: Vis sans tête et éléments de fixation similaires non soumis à des contraintes de traction

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 3506-3 was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 1, *Mechanical properties of fasteners*.

This second edition cancels and replaces the first edition (ISO 3506-3:1997), which has been technically revised.

ISO 3506 consists of the following parts, under the general title *Mechanical properties of corrosion-resistant stainless steel fasteners*:

— *Part 1: Bolts, screws and studs*

— *Part 2: Nuts*

— *Part 3: Set screws and similar fasteners not under tensile stress*

— *Part 4: Tapping screws*

Introduction

In the preparation of this part of ISO 3506, special attention has been given to the fundamentally different property characteristics of the stainless steel fastener grades compared with those of carbon steel and low-alloy steel fasteners. Austenitic stainless steels are strengthened only by cold working and consequently the components do not have as homogeneous local material properties as hardened and tempered parts. These special features have been recognized in the elaboration of the hardness classes and the test procedures for mechanical properties.

Mechanical properties of corrosion-resistant stainless steel fasteners —

Part 3:
Set screws and similar fasteners not under tensile stress

1 Scope

This part of ISO 3506 specifies the mechanical properties of set screws and similar fasteners not under tensile stress made of austenitic stainless steel, when tested over an ambient temperature range of 10 °C to 35 °C. Properties vary at higher or lower temperatures.

This part of ISO 3506 applies to set screws and similar fasteners:

— with nominal thread diameter 1,6 mm $\leqslant d \leqslant$ 24 mm;

— of triangular ISO metric threads with diameters and pitches in accordance with ISO 68-1, ISO 261 and ISO 262;

— of any shape.

It does not apply to screws with special properties, such as weldability.

NOTE The designation system of this part of ISO 3506 can be used for sizes outside the limits given in this clause (e.g. $d >$ 24 mm), provided that all applicable mechanical and physical requirements of the hardness classes are met.

This part of ISO 3506 does not define corrosion or oxidation resistance in particular environments.

The aim of this part of ISO 3506 is the classification of corrosion-resistant stainless steel fasteners into hardness classes.

Corrosion and oxidation performances and mechanical properties for use at elevated or sub-zero temperatures can be agreed on between the user and the manufacturer in each particular case. Annex D shows how the risk of intergranular corrosion at elevated temperatures depends on the carbon content.

All austenitic stainless steel fasteners are normally non-magnetic in the annealed condition; after cold working, some magnetic properties can be evident (see Annex E).

2 Normative references

The following referenced documents are indispensable for the application 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 68-1, *ISO general purpose screw threads — Basic profile — Part 1: Metric screw threads*

ISO 261, *ISO general purpose metric screw threads — General plan*