

**Korrosioonikindlast roostevabast terasest  
kinnitusdetailide mehaanilised omadused.  
Osa 3: Tõmbepingega koormamata  
seadekruvid ja samalaadsed  
kinnitusdetailid**

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 3506-3:1999 sisaldab Euroopa standardi EN ISO 3506-3:1997 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.12.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 3506-3:1999 consists of the English text of the European standard EN ISO 3506-3:1997.</p> <p>This document is endorsed on 12.12.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> See ISO 3506 osa määrab kindlaks roostevabast austeniit-terasest tehtud, tõmbepingega koormamata seadekruvide ja samalaadsete kinnitusdetailide mehaanilised omadused teimimisel keskkonna temperatuuril 15 °C kuni 25 °C. Kõrgematel või madalamatel temperatuuridel võivad omadused muutuda.</p>	<p><b>Scope:</b></p>
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**ICS** 21.060.10

**Võtmesõnad:** katsed, keemiline koostis, kinnitusdetailid, korrosioonikindlad terased, materjalide tehnilised andmed, mehaanilised omadused, mehaanilised teimid, märgistamine, roostevabad terased, seadekruvid, tehnilised andmed, teimiseadmed, terastooted, tähistamine

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Descriptors: Fasteners, technical delivery conditions, steel, set screws.

**English version**

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

**Part 3: Set screws and similar fasteners not under tensile stress  
(ISO 3506-3 : 1997)**

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 : 1997)

Mechanische Eigenschaften von Verbindungselementen aus nicht-rostenden Stählen – Teil 3: Gewindestifte und ähnliche, nicht auf Zug beanspruchte Schrauben (ISO 3506-3 : 1997)

This European Standard was approved by CEN on 1997-10-23.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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## Foreword

International Standard

ISO 3506-3 : 1997 Mechanical properties of corrosion-resistant stainless steel fasteners – Part 3: Set screws and similar fasteners not under tensile stress,

which was prepared by ISO/TC 2 'Fasteners' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 185 'Threaded and non-threaded mechanical fasteners and accessories', the Secretariat of which is held by DIN, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by June 1998 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 3506-3 : 1997 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

## 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 a condition as hardened and tempered parts. These special features have been recognized in the elaboration of the property classes and the test procedures for mechanical properties.

## 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 15 °C to 25 °C. Properties will vary at higher or lower temperatures.

It applies to set screws and similar fasteners

- with nominal thread diameters ( $d$ ) from 1,6 mm up to and including 24 mm;
- of triangular ISO metric threads with diameters and pitches according to ISO 68-1, ISO 261 and ISO 262;
- of any shape.

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

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

The aim of this part of ISO 3506 is a classification into property classes of corrosion resistant stainless steel fasteners. Corrosion and oxidation performances and mechanical properties for use at elevated or sub-zero temperatures must be the subject of agreement between user and 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 may be evident (see annex E).

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 3506. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 3506 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 68-1:—<sup>1)</sup>, *ISO general purpose screw threads – Basic profile – Part 1: Metric screw threads.*

ISO 261:—<sup>2)</sup>, *ISO general purpose metric screw threads – General plan.*

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1) To be published. (Revision of ISO 68:1973)

2) To be published. (Revision of ISO 261:1973)

ISO 262:—<sup>3)</sup>, *ISO general purpose metric screw threads – Selected sizes for screws, bolts and nuts.*

ISO 898-5:—<sup>4)</sup>, *Mechanical properties of fasteners – Part 5: Set screws and similar threaded fasteners not under tensile stresses.*

ISO 965-3:—<sup>5)</sup>, *ISO general-purpose metric screw threads – Tolerances – Part 3: Deviations for constructional threads.*

ISO 3651-1:—<sup>5)</sup>, *Determination of resistance to intergranular corrosion stainless steels – Part 1: Austenitic and ferritic-austenitic (duplex) stainless steels – Corrosion test in nitric acid medium by measurement of loss in mass (Huey test).*

ISO 3651-2:—<sup>6)</sup>, *Determination of resistance to intergranular corrosion stainless steels – Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels – Corrosion test in media containing sulfuric acid.*

ISO 6506:1981, *Metallic materials – Hardness test – Brinell test.*

ISO 6507-1:1997, *Metallic materials – Hardness test – Vickers test – Part 1: Test method.*

ISO 6508:1986, *Metallic materials – Hardness test – Rockwell test (scales A – B – C – D – E – F – G – H – K).*

### 3 Designation, marking and finish

#### 3.1 Designation

The designation system for stainless steel grades and property classes for set screws and similar fasteners is shown in figure 1. The designation of the material consists of two blocks which are separated by a hyphen. The first block designates the steel grade, the second block the property class.

The designation of the steel grade (first block) consists of the letter

**A** for austenitic steel

which indicates the group of steel and a digit which indicates a range of chemical compositions within this steel group.

The designation of the property class (second block) consists of two digits representing 1/10 of the minimum Vickers hardness and the letter H referring to hardness, see table 1.

**Table 1 —Designations of property classes in relation to Vickers hardness**

Property class	12H	21H
Vickers hardness, HV min.	125	210

EXAMPLE:

A1-12H indicates:

austenitic stainless steel, soft, minimum hardness 125 HV.

3) To be published. (Revision of ISO 262:1973)

4) To be published. (Revision of ISO 898-5:1980)

5) To be published. (Revision of ISO 965-3:1980)

6) To be published. (Revision of ISO 3651-1:1976)

7) To be published. (Revision of ISO 3651-2:1976)