



SLOVENSKI STANDARD

SIST ISO 3506-3:2000

01-januar-2000

A Y Ubg_Y`Uglbcghj`_cfcnj^g_c`cXdcfbj\ `bYf^Uj b] \ `^Y_Y`!" "XY.`BUj c`b]`nUj]`]b
dcXcVbY`nj YnYžj nXc`ybc `bYcVfYa Yb^bY

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

iTeh STANDARD PREVIEW

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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Ta slovenski standard je istoveten z: **ISO 3506-3:1997**

ICS:

21.060.10 Sorniki, vijaki, stebelni vijaki Bolts, screws, studs

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en

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1997-12-01

**Mechanical properties of corrosion-
resistant stainless-steel fasteners —****Part 3:**Set screws and similar fasteners not under
tensile stress**iTeh STANDARD PREVIEW**
(standards.iteh.ai)*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**SIST ISO 3506-3:2000*[https://standards.iteh.ai/catalog/standards/sist/9cd90c46-4fe5-4bdf-a23d-
ac7704e6547d/sist-iso-3506-3-2000](https://standards.iteh.ai/catalog/standards/sist/9cd90c46-4fe5-4bdf-a23d-ac7704e6547d/sist-iso-3506-3-2000)Reference number
ISO 3506-3:1997(E)

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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.

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.

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

This first edition, together with ISO 3506-1 and ISO 3506-2, cancels and replaces ISO 3506:1979, 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*

Annexes A to F of this part of ISO 3506 are for information only.

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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.

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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 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:—¹), *ISO general purpose screw threads – Basic profile – Part 1: Metric screw threads.*

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

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

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

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

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

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

ISO 3651-1:—⁵⁾, *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:—⁶⁾, *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

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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.

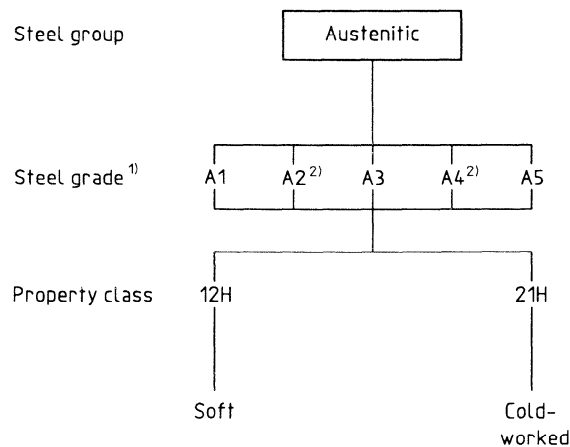
3) To be published. (Revision of ISO 262:1973)

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)



- 1) The steel grades classified in figure 1 are described in the informative annex A and specified by the chemical composition in table 2.
- 2) Low carbon stainless steels with carbon content not exceeding 0,03 % may additionally be marked with an L.

Example: A4L – 21H

Figure 1 — Designation system for stainless steel grades and property classes for set screws and similar fasteners

3.2 Marking

3.2.1 Set screws

Marking of set screws is not mandatory.

Only if all requirements in this part of ISO 3506 are met, parts shall be marked and/or described according to the designation system described in 3.1.

3.2.2 Packages and containers

Marking with the designation and manufacturer's identification mark is mandatory on all packages of all sizes.

3.3 Finish

Unless otherwise specified, fasteners in accordance with this part of ISO 3506 shall be supplied clean and bright. For maximum corrosion resistance passivation is recommended.

4 Chemical composition

The chemical compositions of stainless steels suitable for fasteners in accordance with this part of ISO 3506 are given in table 2.

The final choice of chemical composition within the specified steel grade is at the discretion of the manufacturer unless by prior agreement between the purchaser and the manufacturer.

In applications where risk of intergranular corrosion is present, testing in accordance with ISO 3651-1 or ISO 3651-2 is recommended. In such cases, stabilized stainless steels A3 and A5 or stainless steels A2 and A4 with carbon content not exceeding 0,03 % are recommended.