

**Mechanical properties of corrosion-resistant stainless-steel fasteners - Part 4:
Tapping screws**

Mechanical properties of corrosion-resistant
stainless-steel fasteners - Part 4: Tapping screws

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 3506-4:2004 sisaldab Euroopa standardi EN ISO 3506-4:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 23.11.2004 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 3506-4:2004 consists of the English text of the European standard EN ISO 3506-4:2003.</p> <p>This document is endorsed on 23.11.2004 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>Käsitlusala: This part of ISO 3506 specifies the mechanical properties of tapping screws made from austenitic, martensitic and ferritic grades of corrosion-resistant stainless steels when tested at an ambient temperature range of 15 °C to 25 °C. Properties vary between higher and lower temperatures.</p>	<p>Scope: This part of ISO 3506 specifies the mechanical properties of tapping screws made from austenitic, martensitic and ferritic grades of corrosion-resistant stainless steels when tested at an ambient temperature range of 15 °C to 25 °C. Properties vary between higher and lower temperatures.</p>
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English version

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

**Part 4: Tapping screws
(ISO 3506-4 : 2003)**

Caractéristiques mécaniques des éléments de fixation en acier inoxydable résistant à la corrosion – Partie 4: Vis à tôle (ISO 3506-4 : 2003)

Mechanische Eigenschaften von Verbindungselementen aus nichtrostenden Stählen – Teil 4: Blechschrauben (ISO 3506-4 : 2003)

This European Standard was approved by CEN on 2003-03-21.

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.

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

Management Centre: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 3506-4 : 2003 Mechanical properties of corrosion-resistant stainless-steel fasteners – Part 4: Tapping screws,

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 October 2003 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 3506-4 : 2003 was approved by CEN as a European Standard without any modification.

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

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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 stainless steel fastener grades compared with those of carbon steel and low-alloy steel fasteners. Ferritic and 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 property classes and the test procedures for mechanical properties.

The primary objective of this part of ISO 3506 is to ensure that corrosion-resistant austenitic, martensitic and ferritic stainless steel tapping screws will form mating threads in materials such as aluminium into which they are normally driven without deforming their own thread and without breaking during assembly or service. Selection of the steel group should be based on the intended application.

1 Scope

This part of ISO 3506 specifies the mechanical properties of tapping screws made from austenitic, martensitic and ferritic grades of corrosion-resistant stainless steels when tested at an ambient temperature range of 15 °C to 25 °C. Properties vary between higher and lower temperatures.

It applies to tapping screws with threads from ST2,2 up to and including ST8 in accordance with ISO 1478.

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, however some information on materials for particular environments is given in Annex D. Regarding definitions of corrosion and corrosion resistance see ISO 8044.

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 should be agreed between user and manufacturer in each particular case. Annex C 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 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 1478:1999, *Tapping screws thread*

ISO 3651-1:1998, *Determination of resistance to intergranular corrosion of 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 3651-2:1998, *Determination of resistance to intergranular corrosion of stainless steels — Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels — Corrosion test in media containing sulfuric acid*

ISO 6507-1:1997, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 16048:2003, *Passivation of corrosion-resistant stainless-steel fasteners*