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 STANDARDIKESKUS
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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 3506-3:2010 sisaldab Euroopa standardi EN ISO 3506-3:2009 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 3506-3:2010 consists of the English text of the European standard EN ISO 3506-3:2009.
Standard on kinnitatud Eesti Standardikeskuse 28.02.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 28.02.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 23.09.2009.	Date of Availability of the European standard text 23.09.2009.
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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.

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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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.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.

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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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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*

ISO 262, *ISO general purpose metric screw threads — Selected sizes for screws, bolts and nuts*

ISO 898-5, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 5: Set screws and similar threaded fasteners not under tensile stresses*

ISO 3651-1, *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, *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 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method*

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

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

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

ISO 16426, *Fasteners — Quality assurance system*

3 Designation, marking and finish

3.1 Designation

The designation system for stainless steel grades and hardness classes for set screws and similar fasteners is given 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 and the second block, the hardness 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 (see Table 2).

The designation of the hardness 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 hardness classes in relation to Vickers hardness

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

EXAMPLE **A1-12H** indicates: austenitic steel, soft, minimum hardness 125 HV.

