



ISO 3506-3

**Fasteners — Mechanical properties
of corrosion resistant stainless steel
fasteners —**

Part 3:
**Set screws (and similar fasteners not
under tensile stress) with specified
grades and hardness classes**

*Fixations — Caractéristiques mécaniques des fixations en acier
inoxydable résistant à la corrosion —*

*Partie 3: Vis sans tête (et fixations similaires non soumises à des
contraintes de traction) de grades et classes de dureté spécifiés*

**Third edition
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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 185 *Fasteners*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 3506-3:2009), which has been technically revised.

The main changes are as follows:

- annexes common to several parts of the ISO 3506 series have been withdrawn from this document and are now included in the new ISO 3506-6 which is to be used with this document;
- austenitic stainless steel of grade A8 and duplex (austenitic-ferritic) stainless steels of grades D2 to D8 for hardness class 21H have been added (see [Figure 1](#));
- operational temperature ranges have been clarified (see [Clause 1](#));
- terms and definitions have been added (see [Clause 3](#));
- wording for surface conditions and corrosion resistance have been improved (see [5.2](#) and [5.3](#));
- manufacturer's, supplier's and purchaser's inspections have been added (see [Clause 7](#));
- hardness test and proof torque test methods have been improved (see [Clause 8](#));
- marking and labelling have been improved (see [Clause 9](#));
- structure and content of this document have been brought in line with other parts of ISO 3506 published recently.

A list of all parts in the ISO 3506 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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The properties of stainless steel fasteners result from the chemical composition of the material (especially corrosion resistance) and from the mechanical properties due to manufacturing process. Austenitic and duplex (austenitic-ferritic) stainless steel fasteners are generally manufactured by cold working; they consequently do not have homogeneous local material properties when compared to quenched and tempered fasteners.

Austenitic-ferritic stainless steels referred to as duplex stainless steels were originally invented in the 1930s and have been increasingly used since the 1980s. This document was revised to reflect their standardization for fasteners.

All duplex stainless steels show improved resistance to stress corrosion cracking compared to the commonly used A2 to A5 austenitic grades. Most duplex grades also show higher levels of pitting corrosion resistance, where D2 matches at least A2 and where D4 matches at least A4.