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## Fasteners — Electroplated coating systems

*Fixations — Systèmes de revêtements électrolytiques*



Reference number  
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ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 14, *Surface coatings*.

This third edition cancels and replaces the second edition (ISO 4042:1999), which has been technically revised. The main changes compared to the previous edition are as follows:

- application to all fasteners, including self-tapping and thread forming screws, washers, rivets, clips, etc.;
- focus on coatings designed for corrosion protection of fasteners;
- application to electroplated coating systems with or without additional layers (conversion coating, sealant, top coat, lubricant);
- specification of minimum corrosion resistance (white corrosion and red rust);
- inclusion of up-to-date knowledge about hydrogen embrittlement and prevention measures;
- definitions specified in ISO 1891-2;
- concerning corrosion tests, inclusion of sulfur dioxide test (Kesternich) and calibration of neutral salt spray test;
- inclusion of gaugeability and assemblability requirements;
- for thickness determination, addition of adequate test methods and deletion of the batch average thickness;
- new designation system for all coating systems;
- specification for mechanical and physical properties and related test methods;
- information about design aspects and assembly of coated fasteners;

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- information for coating thickness and thread clearance for ISO metric screw threads;
- information about evaluation of cabinet corrosivity for the neutral salt spray test.

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## **Introduction**

This document was completely revised to take into account new developments related to hexavalent chromium free passivations, application of sealants and top coats, requirements for functional properties as well as results of research work to minimize the risk of hydrogen embrittlement.