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Second edition
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Fasteners — Non-electrolytically applied zinc flake coatings

Fixations — Revêtements non électrolytiques de zinc lamellaire



Reference number
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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 2, *Fasteners*, SC 14, *Surface coatings*.

This second edition cancels and replaces the first edition (ISO 10683:2000). The main technical changes are the following:

- wider application to all types of fasteners and all parties involved, see Introduction, [Clause 1](#), [4.1](#), [4.3](#), [Clause 7](#) and [Annex A](#);
- full description of zinc flake coating systems, see [4.1](#), [4.2](#) and [A.1.2](#);
- definitions related to coatings for fasteners moved to the new standard ISO 1891-2;
- detailed specification in relation with hexavalent chromium;
- detailed specification concerning pre-treatment in relation with internal hydrogen embrittlement, see [4.4](#);
- precedence of corrosion resistance over thickness, see [5.2](#) and [5.3](#);
- extended range of properties for coatings and related test methods (including Kesternich test, thickness and weight determination, torque/tension relationship, determination of hexavalent chromium), see [5.3](#), [7.3](#), [7.7](#), [7.8](#) and [A.2](#);
- consideration related to bulk handling, automatic processes, storage and transport, see [5.4](#) and [A.4](#);
- alternatives for gaugeability and assemblability/mountability, see [6.2.2](#);
- revised arrangement of tests to be carried out for each lot, for in-process control or when specified, see [Clause 8](#);
- revised designation for coating systems and addition of labelling, see [Clause 9](#);
- consideration related to design aspects and assembly of coated fasteners, see new [Annex A](#);

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- detailed specification for coating thickness and thread clearance for ISO metric threads, moved to new [Annex B](#);
- precise control of corrosivity for the salt spray cabinet for coated fasteners, see new [Annex C](#).

Introduction

The revision of ISO 10683:2000 was made in order to define the relevant requirements on zinc flake coated fasteners (coating systems with and without hexavalent chromium) for all parties involved in the fastener field, i.e. chemical suppliers, coaters, fastener manufacturers, distributors and end users. It covers all types of fasteners, i.e. fasteners with ISO metric thread, fasteners with non-ISO metric thread (including thread forming, ASME inch 60° screw thread, etc.) and non-threaded fasteners (including washers, pins, clips, etc.). It also provides basic advice for the design and use of coated fasteners in assembly.