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Fourth edition  
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## **Metallic and other inorganic coatings — Electroplated coatings of zinc with supplementary treatments on iron or steel**

*Revêtements métalliques et autres revêtements inorganiques —  
Dépôts électrolytiques de zinc avec traitements supplémentaires sur  
fer ou acier*



Reference number  
ISO 2081:2018(E)

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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)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 the European Committee for Standardization (CEN) Technical Committee CEN/TC 262, *Metallic and other inorganic coatings*, in collaboration with ISO Technical Committee TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 3, *Electrodeposited coatings and related finishes*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 2081:2008), which has been technically revised. The following main changes have been made:

- the number of normative references has been reduced;
- reference to ASTM B117 has been replaced with ISO 9227;
- some abbreviated terms have been removed;
- coating designations have been modified;
- reference to ISO 1463 for thickness measurement has been increased;
- reference to use of trivalent chromium has been increased
- reference to use of hexavalent chromium has been reduced;
- reference to ISO 19598 in relation to supplementary Cr(VI)-free treatment has been added;
- Tables 1 and 2 have been replaced with a revised [Table 1](#) on neutral salt spray corrosion resistance;
- reference to ISO 15330 in relation to hydrogen embrittlement testing has been added;
- supplementary treatment designations have been modified;
- Annex C has been removed.

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## Introduction

Zinc coatings are applied to iron or steel articles for protective and decorative purposes by electrodeposition from acid zinc chloride, alkaline non-cyanide zinc, and alkaline zinc cyanide solutions. Electroplated, bright zinc coatings are popular and the processes for preparing bright zinc coatings are widely used.

The ability of a zinc coating to prevent corrosion is a function of its thickness and the type of service conditions to which it is exposed. For example, the rate of corrosion of zinc will generally be greater in industrial exposures than in rural ones. The type of service condition should, therefore, be taken into consideration when specifying the minimum coating thickness. Trivalent chromate conversion coatings and other supplementary treatments enhance the corrosion resistance of electrodeposited zinc coatings and are commonly applied after electroplating.

Because the appearance and serviceability of zinc coatings depends on the surface condition of the basis metal, agreement should be reached between the interested parties that the surface finish of the basis metal is satisfactory for electroplating.

Trivalent chromate conversion coatings are omitted, or replaced by other conversion coatings, at the specific request of the purchaser. This document provides the codes for all types of chromate conversion and other supplementary coatings.

With reference to Cr(VI)-free conversion coatings, attention is drawn to ISO 19598. ISO 19598 is applicable to zinc, zinc-iron and zinc-nickel plating, where only trivalent systems are required.

Due to the REACH Regulations the use of hexavalent chromium compounds will be banned in Europe from September 2017 except where specifically authorized. Alternative conversion coatings or substitutes, can be used and are required to satisfy the corrosion requirements given in this document.

Standard designations for metals and alloys can be found in References [12] to [16].