

This is a preview of "ISO 19598:2016". [Click here to purchase the full version from the ANSI store.](#)

First edition  
2016-11-15

---

---

## **Metallic coatings — Electroplated coatings of zinc and zinc alloys on iron or steel with supplementary Cr(VI)-free treatment**

*Revêtements métalliques — Revêtements électrolytiques de zinc et d'alliages de zinc sur du fer ou de l'acier avec traitement supplémentaire sans Cr(VI)*



Reference number  
ISO 19598:2016(E)

© ISO 2016

This is a preview of "ISO 19598:2016". Click here to purchase the full version from the ANSI store.



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
copyright@iso.org  
www.iso.org

This is a preview of "ISO 19598:2016". [Click here to purchase the full version from the ANSI store.](#)

## Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Designation</b> .....	<b>2</b>
4.1 Electrodeposited coatings.....	2
4.2 Passivation.....	2
4.3 Post treatment.....	2
4.4 Significant (functional) surfaces.....	3
4.5 Examples of designations.....	3
<b>5 Information to be supplied by the purchaser to the electroplater</b> .....	<b>3</b>
<b>6 Basis materials</b> .....	<b>4</b>
<b>7 Coating and processing</b> .....	<b>4</b>
7.1 Surface preparation and deposition of zinc or zinc-alloy coating.....	4
7.2 Supplementary treatments.....	4
7.2.1 Passivation layers.....	4
7.2.2 Post treatment.....	5
7.3 Barrel-/rack-plating (handling of parts).....	5
7.3.1 Barrel electroplating.....	5
7.3.2 Rack electroplating.....	5
7.4 Hydrogen embrittlement.....	5
7.4.1 Basic factors.....	5
7.4.2 Choice of procedure.....	6
<b>8 Requirements to be met by coatings and test methods</b> .....	<b>7</b>
8.1 Thickness.....	7
8.2 Adhesion.....	7
8.3 Absence of Cr(VI).....	8
8.4 Accelerated corrosion testing.....	8
8.4.1 General.....	8
8.4.2 Minimum corrosion resistance of passivated zinc and zinc-alloy coatings.....	8
<b>9 Test report</b> .....	<b>10</b>
9.1 General information.....	10
9.2 Coatings on materials having a tensile strength $\geq 1\ 000\ \text{N/mm}^2$ .....	10
9.3 Test results.....	10
<b>Bibliography</b> .....	<b>11</b>

## 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 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).

The committee responsible for this document is ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 3, *Electrodeposited coatings and related finishes*.

This is a preview of "ISO 19598:2016". [Click here to purchase the full version from the ANSI store.](#)

## Introduction

The chromium(VI) free systems differ in 2 points from the chromium(VI)-containing systems:

- a) there is no self-healing of the system;
- b) higher temperature resistance ( $> 150\text{ °C}$ ), the limit for chromium(VI) containing systems, is  $\leq 70\text{ °C}$ .