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Irish Standard
I.S. EN ISO 6158:2011

Metallic and other inorganic coatings - Electrodeposited coatings of chromium for engineering purposes (ISO 6158:2011)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 6158

July 2011

ICS 25.220.40

Supersedes EN ISO 6158:2004

English Version

Metallic and other inorganic coatings - Electrodeposited coatings of chromium for engineering purposes (ISO 6158:2011)

Revêtements métalliques et autres revêtements inorganiques - Dépôts électrolytiques de chrome pour usages industriels (ISO 6158:2011)

Metallische und andere anorganische Überzüge - Galvanische Chromüberzüge für technische Zwecke (ISO 6158:2011)

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Foreword

This document (EN ISO 6158:2011) has been prepared by Technical Committee ISO/TC 107 "Metallic and other inorganic coatings" in collaboration with Technical Committee CEN/TC 262 “Metallic and other inorganic coatings” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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INTERNATIONAL STANDARD

ISO 6158

Third edition
2011-07-15

Metallic and other inorganic coatings — Electrodeposited coatings of chromium for engineering purposes

Revêtements métalliques et autres revêtements inorganiques — Dépôts électrolytiques de chrome pour usages industriels

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 6158 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 3, *Electrodeposited coatings and related finishes*.

This third edition cancels and replaces the second edition (ISO 6158:2004), of which it constitutes a minor revision.

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Introduction

Electrodeposited chromium coatings are frequently deposited from hexavalent chromium solutions similar to those used for decorative electroplating. Engineering chromium coatings, however, are generally thicker than decorative ones. Regular or conventional chromium is the type most frequently specified, but porous, cracked or specially profiled surfaces and duplex chromium are also applied to achieve oil-retaining or non-sticking surfaces, or to improve corrosion resistance.

Electrodeposited chromium coatings for engineering applications are most often applied directly to the basis metal to increase wear and abrasion resistance, to increase fretting resistance, to reduce static and kinetic friction, to reduce galling and seizing, to increase corrosion resistance, and to build up undersize or worn parts. For protection against severe corrosion, nickel or other metallic undercoats may be applied prior to the electrodeposition of chromium, or the corrosion resistance of the chromium coating may be increased by alloying, e.g. with molybdenum.

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Metallic and other inorganic coatings — Electrodeposited coatings of chromium for engineering purposes

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1 Scope

This International Standard specifies requirements for electroplated coatings of hexavalent chromium, with or without undercoats, on ferrous and non-ferrous metals for engineering purposes. The coating designation provides a means of specifying the thickness of chromium appropriate for typical engineering applications.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1463, *Metallic and oxide coatings — Measurement of coating thickness — Microscopical method*

ISO 2064, *Metallic and other inorganic coatings — Definitions and conventions concerning the measurement of thickness*

ISO 2080, *Metallic and other inorganic coatings — Surface treatment, metallic and other inorganic coatings — Vocabulary*

ISO 2177, *Metallic coatings — Measurement of coating thickness — Coulometric method by anodic dissolution*

ISO 2178, *Non-magnetic coatings on magnetic substrates — Measurement of coating thickness — Magnetic method*

ISO 2819, *Metallic coatings on metallic substrates — Electrodeposited and chemically deposited coatings — Review of methods available for testing adhesion*

ISO 3497, *Metallic coatings — Measurement of coating thickness — X-ray spectrometric method*

ISO 3543, *Metallic and non-metallic coatings — Measurement of thickness — Beta backscatter method*

ISO 3882, *Metallic and other inorganic coatings — Review of methods of measurement of thickness*

ISO 4516, *Metallic and other inorganic coatings — Vickers and Knoop microhardness tests*

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