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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



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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.

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.

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.