NSAI Standards

Irish Standard
I.S. EN ISO 1456:2009

Metallic and other inorganic coatings - Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium (ISO 1456:2009)

I.S. EN ISO 1456:2009

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EUROPEAN STANDARD

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EN ISO 1456

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English Version

Metallic and other inorganic coatings - Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium (ISO 1456:2009)

Revêtements métalliques et autres revêtements inorganiques - Dépôts électrolytiques de nickel, de nickel plus chrome, de cuivre plus nickel et de cuivre plus nickel plus chrome (ISO 1456:2009)

Metallische und andere anorganische Überzüge - Galvanische Überzüge aus Nickel, Chrom-Nickel und Kupfer-Chrom-Nickel (ISO 1456:2009)

This European Standard was approved by CEN on 8 July 2009.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 1456:2009) 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of an identical text or by endorsement, at the latest by February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.

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.

This document supersedes EN 12540:2000.

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Endorsement notice

The text of ISO 1456:2009 has been approved by CEN as a EN ISO 1456:2009 without any modification.

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I.S. EN ISO 1456:2009

INTERNATIONAL STANDARD

ISO 1456

Fourth edition
2009-08-01

Metallic and other inorganic coatings — Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium

Revêtements métalliques et autres revêtements inorganiques — Dépôts électrolytiques de nickel, de nickel plus chrome, de cuivre plus nickel et de cuivre plus nickel plus chrome

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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 1456 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 3, *Electrodeposited coatings and related finishes*.

This fourth edition cancels and replaces the third edition (ISO 1456:2003), which has been technically and editorially revised. This edition also cancels and replaces ISO 1458:2002.

Introduction

This International Standard is a revised version of ISO 1456:2003: *Metallic coatings — Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium* incorporating ISO 1458:2002: *Metallic coatings — Electrodeposited coatings of nickel*.

Decorative, electrodeposited nickel coatings, with and without copper undercoats and without chromium top-coats, are suitable for applications in which tarnishing could be prevented by avoiding rubbing or handling in service or by the use of topcoats other than chromium. They are also suitable for those applications where tarnishing is of no importance. Corrosion resistance depends on the type and thickness of the coatings.

Decorative, electrodeposited nickel plus chromium and copper plus nickel plus chromium coatings are applied to manufactured articles to enhance their appearance and corrosion resistance. Corrosion resistance depends on the type and thickness of the coatings. In general, multilayer nickel coatings provide better corrosion resistance than single-layer nickel coatings of equal thickness, and micro-discontinuous chromium coatings provide better protection than conventional chromium.

Metallic and other inorganic coatings — Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium

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1 Scope

This International Standard specifies requirements for decorative nickel, nickel plus chromium, copper plus nickel and copper plus nickel plus chromium coatings that are applied to iron, steel, zinc alloys, copper and copper alloys, and to aluminium and aluminium alloys, to provide an attractive appearance and enhanced corrosion resistance. Coating designations are specified that differ in thickness and type, and guidance is given on selecting the coating designation appropriate for the service conditions to which the coated product will be exposed.

This International Standard does not specify the surface condition required by the basis metal prior to the coating process, and is not applicable to coatings on sheet, strip or wire in the non-fabricated form nor to threaded fasteners or coil springs.

Requirements for decorative, electroplated copper plus nickel plus chromium coatings on plastic materials are specified in ISO 4525. ISO 4526 and ISO 6158 specify requirements for coatings of nickel and chromium, respectively, for engineering purposes.

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*