INTERNATIONAL STANDARD

ISO 12686

First edition
1999-12-01

Metallic and other inorganic coatings — Automated controlled shot-peening of metallic articles prior to nickel, autocatalytic nickel or chromium plating, or as a final finish

Revêtements métalliques et autres revêtements inorganiques — Grenaillage automatique de pièces métalliques avant dépôt électrolytique de nickel, dépôt autocatalytique de nickel, ou dépôt électrolytique de chrome, ou en tant que finition de surface

Reference number
ISO 12686:1999(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 734 10 79
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

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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 3.

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.

International Standard ISO 12686 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 3, *Electrodeposited coatings and related finishes*.

Annexes A to F form a normative part of this International Standard. Annex G is for information only.

Introduction

Shot-peening is a process for cold-working surfaces by bombarding the product with shot of a solid and spherical nature propelled at a relatively high velocity. In general, shot peening will increase fatigue life of a product that is subject to bending or torsional stress. It will improve resistance to stress-corrosion cracking. It can be used to form parts or correct their shapes. See annex G for additional information.

It is essential that the shot-peening process parameters be rigidly controlled to ensure repeatability from part to part and lot to lot.

This International Standard describes techniques and methods necessary for proper control of the shot peening process.

Metallic and other inorganic coatings — Automated controlled shot-peening of metallic articles prior to nickel, autocatalytic nickel or chromium plating, or as a final finish

1 Scope

This International Standard describes the requirements for automated, controlled shot-peening of metallic articles prior to electrolytic or autocatalytic deposition of nickel or chromium, or as a final finish, using shot made of cast steel, conditioned cut wire, ceramic shot or glass beads. The process is applicable to those materials on which test work has shown it to be beneficial within given intensity ranges. It is usually not suitable for brittle materials. Hand-peening and rotary flap-peening are specifically excluded.

Shot-peening induces residual compressive stresses in the surface and near surface layers of metallic articles, and changes the surface microstructure (including phase transformation), thereby controlling or limiting the reduction in fatigue properties that occurs from nickel or chromium plating of the article, or increasing the fatigue properties of unplated articles.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 565:1990, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings.*

ISO 2194:1991, *Industrial screens — Woven wire cloth, perforated plate and electroformed sheet — Designation and nominal sizes of openings.*

ISO 3310-1:1990, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth.*

ISO 3453:1984, *Non-destructive testing — Liquid penetrant inspection — Means of verification.*

ISO 6933:1986, *Railway rolling stock material — Magnetic particle acceptance testing.*