
**Watch-cases and accessories — Gold
alloy coverings —**

**Part 2:
Determination of fineness, thickness,
corrosion resistance and adhesion**

*Boîtes de montres et leurs accessoires — Revêtements d'alliage d'or —
Partie 2: Détermination du titre, de l'épaisseur, de la résistance à la
corrosion et de l'adhérence*

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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.

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).

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).

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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 WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 114, *Horology*, Subcommittee SC 6, *Precious metal coverings*.

This fourth edition cancels and replaces the third edition (ISO 3160-2:2003), of which it constitutes a technical revision.

ISO 3160 consists of the following parts, under the general title *Watch-cases and accessories — Gold alloy coverings*:

- *Part 1: General requirements*
- *Part 2: Determination of fineness, thickness, corrosion resistance and adhesion*

Introduction

Gold alloy coatings deposited on watch-cases and their accessories have to comply with technical, decorative requirements and have to also satisfy national rules about precious metals.

This part of ISO 3160 aims to specify coating characterization methods to qualify their corrosion resistance and their adhesion to the substrate concerning esthetical and technical aspects, and to specify methods to determine thickness and gold fineness of these coatings to check that they satisfy the requirements of ISO 3160-1.

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Watch-cases and accessories — Gold alloy coverings —

Part 2:

Determination of fineness, thickness, corrosion resistance and adhesion

1 Scope

This part of ISO 3160 specifies methods to determine fineness, thickness, corrosion resistance and adhesion for gold alloy coverings on watch-cases and accessories, including bracelets when they are permanently attached to the case.

The tests apply only to significant surfaces.

This part of ISO 3160 applies to all gold alloy coverings specified in ISO 3160-1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 2177, *Metallic coatings — Measurement of coating thickness — Coulometric method by anodic dissolution*

ISO 3160-1, *Watch-cases and accessories — Gold alloy coverings — Part 1: General requirements*

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

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

ISO 3868, *Metallic and other non-organic coatings — Measurement of coating thicknesses — Fizeau multiple-beam interferometry method*

ISO 4538, *Metallic coatings — Thioacetamide corrosion test (TAA test)*

ISO 9220, *Metallic coatings — Measurement of coating thickness — Scanning electron microscope method*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

ISO 11426, *Jewellery — Determination of gold in gold jewellery alloys — Cupellation method (fire assay)*

ISO 12687, *Metallic coatings — Porosity tests — Humid sulfur (flowers of sulfur) test*

ISO 14647, *Metallic coatings — Determination of porosity in gold coatings on metal substrates — Nitric acid vapour test*

ISO 27874, *Metallic and other inorganic coatings — Electrodeposited gold and gold alloy coatings for electrical, electronic and engineering purposes — Specification and test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.