International Standard

ISO 10713

Second edition
2025-02

Jewellery and precious metals — Gold alloy coatings

Joaillerie, bijouterie et métaux précieux — Revêtements d'alliages d'or

Reference number
ISO 10713:2025(en)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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Foreword

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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 document 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).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 174, *Jewellery and precious metals.*

This second edition cancels and replaces the first edition (ISO 10713:1992), which has been technically revised.

The main changes are as follows:

— Introduction was added;

— Clause 2 was updated;

— Clause 3 was added;

— Requirements for coating thickness were revised;

— Methods for measuring gold thickness were revised;

— Table 1 and Table 2 were updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document defines the terms 'rolled gold' and 'gold plated' in terms of minimum mass, thickness, and fineness of the applied gold alloy coating. It also establishes a marking classification for purchasers to identify these essential features.

This document applies to gold and gold alloy coatings used in jewellery (both precious and non-precious), general decorative items, and other specialised applications in the jewellery trade that require a relatively thick coating. However, it does not modify the provisions of national regulations or Assay & Hallmarking laws in countries where statutory hallmarking is practised. When requesting plating in accordance with this document, the purchaser specifies the nature of the base metal and the required coating classification number in addition to referencing this document.

Jewellery and precious metals — Gold alloy coatings

1 Scope

This document outlines specifications for gold and gold alloy coatings, including double, multi-layered, and rolled gold coatings, by defining the minimum mass, thickness, and fineness requirements. The specifications apply to all gold coatings, whether applied on precious or non-precious jewellery and general decorative items. Additionally, this document defines the current vocabulary for gold alloy coatings.

This document does not apply to watch-cases and their accessories, including bracelets permanently attached to the case.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes the requirements 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 3160-2, *Watch-cases and accessories — Gold alloy coverings — Part 2: Determination of fineness, thickness, corrosion resistance and adhesion*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
gold fineness
content of gold, expressed as parts per thousand (‰) by mass

3.2
gold plated covering
layer of gold or gold alloy with a fineness of at least 585 parts per thousand (‰), applied through an electrolytic, chemical, or other non-mechanical process

3.3
rolled gold covering
mechanically applied layer of gold or gold alloy with a fineness of at least 585 parts per thousand (‰)

3.4
decorative item
object designed with the visual appeal of jewellery but distinct in function

4 Requirements

4.1 General requirements

Articles that meet the specific requirements of minimum gold alloy mass, thickness, and fineness defined in this document shall be designated by the corresponding classification.

4.2 Rolled gold

Rolled gold covering applied by a mechanical process shall weigh at least 1/40th of the article's total mass, corresponding to GR 1/40 classification. The minimum gold alloy fineness shall be 585 parts per thousand (‰).

Requirements for other categories are detailed in Table 1.

Table 1 — Terms, manufacturing process and coating requirements for rolled gold articles

Term	Manufacturing process	Classification	Minimum fraction of gold alloy in the entire mass of the article	Minimum fineness parts per thousand, ‰
Rolled gold	Mechanical	GR 1/5	1/5	585
		GR 1/10	1/10	585
		GR 1/20	1/20	585
		GR 1/40	1/40	585

EXAMPLE If the gold alloy applied to the article through the mechanical process has a purity level of at least 585 parts per thousand (‰), and the mass of this gold alloy is at least 1/20th but less than 1/10th of the total mass of the item, then it is classified as GR 1/20.

To meet either the GR 1/20 or the GR 1/40 specification, an item weighing 60 g shall contain at least 3,0 g or 1,5 g of gold alloy, respectively, each with a fineness of not less than 585 parts per thousand (‰).

4.3 Gold plating

Gold plated covering applied through an electrolytic, chemical, or other non-mechanical process shall have a coating thickness of at least 0,1 µm, corresponding to GP 0.1 classification. The minimum gold alloy coating fineness shall be 585 ‰.

Requirements for other categories of gold-plated articles are detailed in Table 2.

Table 2 — Terms, manufacturing process and coating requirements for gold plated articles

Term	Manufacturing process	Classification	Minimum coating thickness µm	Minimum fineness parts per thousand, ‰
Gold plated	Any process except a mechanical one	GP 5	5	585
		GP 3	3	585
		GP 1	1	585
		GP 0.5	0,5	585
		GP 0.2	0,2	585
		GP 0.1	0,1	585

EXAMPLE If a gold coating is applied through an electrolytic, chemical, or other non-mechanical process, has a purity level of at least 585 parts per thousand (‰) and has a coating thickness of at least 1 µm but less than 3 µm, it shall be classified as GP 1.