

ICS 25.220.40
CCS A 29



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 47886-2026

**Metallic and other inorganic coatings - Electrodeposited silver
and silver alloy coatings for engineering purposes -
Specification and test methods**

金属及其他无机覆盖层 工程用银和银合金电镀层 技术规范 and 试验方法
(English Translation)

Issued on: July 2, 2026

Implemented on: February 1, 2027

Issued by: State Administration for Market Regulation

Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative References	
3 Terms and Definitions	
4 Information to be provided by the electroplating party	
4.1 Required Information	
5 Identification	
5.1 General Rules	
5.2 Identification Rules	
5.3 Identification of Substrate	
5.4 Heat treatment requirements marking	
5.5 Identification Example	
6 Requirements	
6.1 General Rules	
6.2 Appearance	
6.3 Thickness	
6.4 Porosity	
6.5 Corrosion resistance	
6.6 Ingredients	
6.7 Heat treatment to relieve stress before plating	
6.8 Post-plating heat treatment to reduce hydrogen embrittlement	
6.9 Bond strength	
6.10 Electrical Performance	
6.11 Microhardness	
6.12 Solderability	
6.14 Extensibility	
6.15 Base Coating	
6.16 Residual Salt Test	
6.17 Anti-discoloration treatment	
7 Sampling	
Appendix A (Normative) Requirements for Undercoating	

A.1 Thickness Requirements and Measurement

A.2 Common Chemical Symbols for Undercoatings

Appendix B (Normative) Measurement of the Thickness of Silver and Silver Alloy Electroplating Coatings

B.1 Measurement Uncertainty

B.2 Calculation of Density and Thickness

B.3 Non-destructive method

B.4 Semi-destructive methods

B.5 Destructive Methods

B.6 Test Report

Appendix C (Normative) Bond Strength Test

C.1 Friction Polishing Test

C.2 Tumbler Polishing Test

C.3 Peel Test

C.5 Shear test

C.6 Thermal shock test

C.7 Test Report

Appendix D (Normative) Determination of Residual Salts

D.1 Overview

D.2 Principle

D.3 Reagent

D.4 Instrument

D.5 Operation Step

D.6 Test Report

References

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is modified to adopt ISO 4521:2008 "Technical Specification for Electroplating of Silver and Silver Alloys for Engineering Use in Metallic and Other Inorganic Coatings".

"and test methods".

This document has undergone the following structural adjustments compared to ISO 4521:2008.

---D.4 corresponds to D.4, D.4.1, D.4.2, and D.4.3 of ISO 4521:2008.

The technical differences between this document and ISO 4521:2008, and the reasons therefor, are as follows.

Chapter 3), GB/T 17720 replaces ISO 10308 (see 6.4), and GB/T 18179 replaces ISO 12687 (see 6.4).

GB/T 19351 replaces ISO 14647 (see 6.4), GB/T 6461 replaces ISO 10289 (see 6.5), and GB/T 19349...

It replaces ISO 9587 (see 6.7), GB/T 19350 replaces ISO 9588 (see 6.8), and GB/T 9790 replaces...

ISO 4516 (see 6.11) and GB/T 2423.28 replace IEC 60068-2-20 (see 6.12), and GB/T 4955 replaces...

ISO 2177 (see A.1) and GB/T 6462 have replaced ISO 1463 (see A.1), and GB/T 20018 has replaced ISO 3543 (see A.1).

B.3.1) GB/T 4956 replaced ISO 2178 (see B.3.2), and GB/T 16921 replaced ISO 3497 (see B.3.3).

GB/T 11378 replaces ISO 4518 (see B.4.3), GB/T 45340 replaces ISO 3868 (see B.4.4), GB/T 12609 replaced ISO 10111 (see B.5.2) and GB/T 12609 replaced ISO 4519 (see Chapter 7) to adapt to my country's national standards.

Technical conditions;

---The normative reference to GB/T 26107 has been deleted, and normative references to HB5067.1 and HB5067.2 (see 6.8) have been added to adapt to...

Based on my country's technological conditions.

The following editorial changes have been made to this document.

---A heading B.4.1 has been added (see B.4.1).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Metallic and Non-metallic Coatings (SAC/TC57).

Introduction

Silver and silver alloy electroplating are often used in specific applications due to their excellent electrical conductivity; however, in electrical, electronic, and other applications...

Corrosion resistance is also typically required. In many applications, a sulfide film may form on the plating surface, which increases the contact area of the electroplated silver.

The contact resistance makes it unsuitable for low-voltage electronic circuits. Because sulfides are not completely insulating, they can be used at high voltages and high contact pressures.

Applications of force in various scenarios.

Although this document does not specify requirements for the condition, surface finish, or roughness of the substrate before electroplating, the appearance of silver and silver alloy electroplated layers and Performance still depends on the condition of the substrate. The relevant parties need to reach an agreement based on whether the surface finish and roughness of the substrate material meet the electroplating requirements.

consensus.

Silver and silver alloy electroplating has been used on bearing surfaces for decades, and is particularly suitable for load-bearing surfaces with insufficient lubrication.

Silver alloy plating has largely replaced gold alloy plating on the metal lead frame that supports most silicon chips.

Metallic and other inorganic coatings Engineering silver and silver alloy electroplating Technical specifications and test methods Warning. Some substances and processes described in this document may pose health hazards if appropriate precautions are not taken. This document does not...

There are discussions regarding any health hazards and safety matters and regulations involved in the use of the standard. Users of the standard have a responsibility to establish appropriate and feasible [measures/policies].

Health, safety, and environmental regulations, and take appropriate measures to ensure they comply with national, regional, and international regulations and rules. Compliance with this document does not...

1 Scope

This document specifies the technical requirements and test methods for silver and silver alloy electroplating in electrical, electronic and other engineering applications.

This document applies to non-decorative engineering applications of silver and silver alloy