



Metallic coatings — Test methods for electrodeposited silver and silver alloy coatings — Part 1 : Determination of coating thickness

*Revêtements métalliques — Méthodes d'essai des dépôts électrolytiques d'argent et d'alliages d'argent — Partie 1 :
Détermination de l'épaisseur du dépôt*

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4522/1 was prepared by Technical Committee ISO/TC 107, *Metallic and other non-organic coatings*.

Metallic coatings — Test methods for electrodeposited silver and silver alloy coatings — Part 1 : Determination of coating thickness

0 Introduction

The methods given in this part of ISO 4522 are considered to have an adequate accuracy when properly used with test specimens suitable for the particular method. If a referee method is required, it shall be agreed between the parties concerned and shall be selected from the methods given in clauses 3 to 9 for local thickness and 10 and 11 for average thickness. The method chosen shall be one which is expected to yield the most reliable results considering such factors as coating thickness, shape of component, size of component, coating material, basis material, etc. Those methods requiring a value for the density of the electrodeposited coating can only be used if the true density of the silver or silver alloy is known.

Other test methods may be used if it can be demonstrated that they have a measurement uncertainty of less than 10 %, or that they are as good as or better than the methods given in this part of ISO 4522 for the particular application.

1 Scope and field of application

This part of ISO 4522 specifies methods for the determination of the thickness of electrodeposited silver and silver alloy coatings for engineering, and decorative and protective purposes.

2 References

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.*¹⁾

ISO 2178, *Non-magnetic coatings on magnetic substrates — Measurement of coating thickness — Magnetic method.*

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 thickness — Fizeau multiple-beam interferometry method.*

ISO 4518, *Metallic coatings — Measurement of coating thickness — Profilometric method.*

3 Microscopical method

Use the method specified in ISO 1463, paying particular attention to the requirements for overplating and its limitations when measuring thin coatings.

4 Coulometric method

Use the method specified in ISO 2177.

NOTE — Certain addition agents may affect the accuracy of coulometric results.

5 Beta backscatter method

Use the method specified in ISO 3543.

6 Magnetic method

Use the method specified in ISO 2178.

7 X-ray spectrometric method

Use the method specified in ISO 3497.

1) At present at the stage of draft. (Revision of ISO 2177-1972.)