
Kovinske prevleke - Preskus poroznosti - Ugotavljanje poroznosti zlatih ali paladijskih prevlek na kovinskih podlagah z gelsko elektrografijo (ISO 15720:2001)

Metallic coatings - Porosity tests - Porosity in gold or palladium coatings on metal substrates by gel-bulk electrography (ISO 15720:2001)

Metallische Überzüge - Porenprüfungen - Bestimmung des Porenanteils in Gold- oder Palladiumüberzügen auf metallischen Grundwerkstoffen durch Gel-Elektrographie (ISO 15720:2001)

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Revetements métalliques - Essais de porosité - Porosité des revêtements d'or ou de palladium sur métaux par électrographie par gélification (ISO 15720:2001)

Ta slovenski standard je istoveten z: EN ISO 15720:2001

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25.220.40 Kovinske prevleke Metallic coatings

SIST EN ISO 15720:2002**en**

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EN ISO 15720

April 2001

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English version

Metallic coatings - Porosity tests - Porosity in gold or palladium coatings on metal substrates by gel-bulk electrography (ISO 15720:2001)

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This European Standard was approved by CEN on 15 April 2001.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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EN ISO 15720:2001

Foreword

The text of the International Standard ISO 15720:2001 has been prepared by Technical Committee ISO/TC 107 "Metallic and other inorganic coatings" in collaboration with Technical Committee CEN/TC 262 "Metallic and other inorganic coatings", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2001, and conflicting national standards shall be withdrawn at the latest by October 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 15720:2001 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

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Annex ZA (normative)
**Normative references to international publications
with their relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE Where an International Publication has been modified by common modifications, indicated by (mod.), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 10308	1995	Metallic coatings - Review of porosity tests	EN ISO 10308	1997

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ISO
15720

First edition
2001-04-15

**Metallic coatings — Porosity tests —
Porosity in gold or palladium coatings on
metal substrates by gel-bulk electrography**

*Revêtements métalliques — Essais de porosité — Porosité des
revêtements d'or ou de palladium sur métaux par électrographie par
gélification*

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ISO 15720:2001(E)**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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15720 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, Subcommittee SC 7, *Corrosion tests*.

Annexes A and B of this International Standard are for information only.

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Introduction

This test method is an electrographic technique, "gel-bulk electrography." The specimen is made the anode in a cell containing a solid or semi-solid electrolyte of gelatin, conducting salts and an indicator. Application of current to this cell results in the migration of base metal ions through continuous pores. Reaction of cations with an indicator gives rise to coloured *reaction products* (not to be confused with *corrosion products*) at pore sites which may be counted through the clear gel. Individual spots are counted with the aid of a lense or low-power stereomicroscope.

The test method is designed to show whether the porosity level is less than or greater than a given value which, from experience, is considered by the user to be acceptable for the intended application.

These porosity tests involve corrosion reactions in which the products delineate defect sites in coatings. Since the chemistry and properties of these products do not resemble those found in natural or service environments, these tests can not be recommended for the prediction of the electrical performance of contacts unless correlation is first established with service experience.

This test method is suitable for coatings containing 75 % or more of gold on substrates of silver, nickel, copper and its alloys that are commonly used in electrical contacts. This test method is also suitable for coatings of 95 % or more of palladium on nickel, copper and its alloys, and for coatings of palladium-nickel alloy (75 % or more of palladium) on nickel, copper and its alloys.

This test method is capable of detecting porosity or other defects in gold or palladium coatings that could participate in substrate corrosion reactions. In addition, it can be used on contacts having complex geometry such as pin-socket contacts (although difficulty may be experienced in inspecting deep recesses).

This test is considered destructive because it reveals the presence of porosity by contaminating the surface with corrosion products and by it undercuts the corrodible metal at pore sites and at unplated areas. In addition, the surface is coated with a corrosive gel mixture which is difficult to remove completely. Any parts exposed to the gel test shall not be placed in service.