



**SLOVENSKI STANDARD**  
**SIST EN ISO 22674:2007**

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**SIST EN ISO 1562:2004**

**SIST EN ISO 16744:2004**

**SIST EN ISO 6871-1:2000**

**SIST EN ISO 6871-1:2000/AC:2003**

**SIST EN ISO 6871-2:2000**

**SIST EN ISO 8891:2000**

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**Zobozdravstvo - Kovinski materiali za stalne in zamenljive zobne obnove in orodja**  
**(ISO 22674:2006)**

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Dentistry - Metallic materials for fixed and removable restorations and appliances (ISO 22674:2006)

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Zahnheilkunde - Metallische Werkstoffe für festsitzenden und herausnehmbaren  
Zahnersatz und Vorrichtungen (ISO 22674:2006)

Art dentaire - Matériaux métalliques pour les restaurations fixes et amovibles et les  
appareillages (ISO 22674:2006)

**Ta slovenski standard je istoveten z: EN ISO 22674:2006**

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**ICS:**

11.060.10 Z[ à[ c@ã } ä æ'ãä Dental materials

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English Version

## Dentistry - Metallic materials for fixed and removable restorations and appliances (ISO 22674:2006)

Art dentaire - Matériaux métalliques pour les restaurations  
fixes et amovibles et les appareillages (ISO 22674:2006)

Zahnheilkunde - Metallische Werkstoffe für festsitzenden  
und herausnehmbaren Zahnersatz und Vorrichtungen (ISO  
22674:2006)

This European Standard was approved by CEN on 28 October 2006.

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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 Central Secretariat has the same status as the official versions.

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## Foreword

This document (EN ISO 22674:2006) has been prepared by Technical Committee ISO/TC 106 "Dentistry" in collaboration with Technical Committee CEN/TC 55 "Dentistry", the secretariat of which is held by DIN.

This document supersedes EN ISO 1562:2004, EN ISO 6871-1:1996, EN ISO 6871-1:1996, EN ISO 8891:2000 and EN ISO 16744:2003.

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 May 2007, and conflicting national standards shall be withdrawn at the latest by May 2007.

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

### Endorsement notice

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**Dentistry — Metallic materials for fixed  
and removable restorations and  
appliances**

*Art dentaire — Matériaux métalliques pour les restaurations fixes et  
amovibles et les appareillages*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 22674 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 2, *Prosthetic materials*.

This first edition cancels and replaces the following composition-derived International Standards: ISO 1562, ISO 6871-1, ISO 6871-2, ISO 8891 and ISO 16744.

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## Introduction

Specific qualitative and quantitative requirements for freedom from biological hazard are not included in this International Standard but it is recommended that, in assessing possible biological hazards, reference should be made to ISO 10993-1 and ISO 7405.

Requirements for the performance of metals and alloys used for the metallic component of a metal-ceramic restoration contained in this International Standard supersede such requirements formerly contained in ISO 9693. The requirements for the performance of ceramic material and the metal-ceramic bond in metal-ceramic restorative systems continue to be specified in ISO 9693.

Requirements for the proof stress and minimum elongation after fracture for Type 0 metallic materials are not included in this International Standard, but it is recommended to adopt the test procedure given in Annex A when measuring these properties. Requirements will be included in a revision of this International Standard when information becomes available to Technical Committee ISO/TC 106 Subcommittee 2.

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# Dentistry — Metallic materials for fixed and removable restorations and appliances

## 1 Scope

This International Standard classifies metallic materials that are suitable for the fabrication of dental appliances and restorations, including metallic materials recommended for use either with or without a ceramic veneer, or recommended for both uses, and specifies their requirements. It further specifies requirements with respect to packaging and marking the products and to the instructions to be supplied for the use of these materials.

This International Standard does not apply to alloys for dental amalgam (ISO 24234), dental brazing materials (ISO 9333), or metallic materials for orthodontic appliances (ISO 15841) (e.g., wire, bracket, band and screw).

## 2 Normative references

The following referenced documents are indispensable for the application 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 1942, *Dentistry — Vocabulary*, [SIST EN ISO 22674:2007](https://standards.iteh.ai/catalog/standards/sist/e967eae2-5ac2-484f-8009-3526a3b8f918/sist-en-iso-22674-2007)

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

ISO 6892, *Metallic materials — Tensile testing at ambient temperature*

ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

ISO 9513:1999, *Metallic materials — Calibration of extensometers used in uniaxial testing*

ISO 9693, *Metal-ceramic dental restorative systems*

ISO 10271:2001, *Dental metallic materials — Corrosion test methods*

ISO 15223:2000, *Medical devices — Symbols to be used with medical device labels, labelling and information to be supplied*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions of ISO 1942 and the following apply.

### 3.1

#### **base metal**

any metallic element with the exception of noble metals and silver

**3.2**  
**hazardous element**

element that is known for its potential to produce an adverse biological effect

NOTE The presence of such an element (as an alloying addition or as an impurity) in a dental alloy does not imply that the alloy, in itself, is harmful.

**3.3**  
**metallic material**

material having the properties that are associated with an alloy, noble metal or base metal

NOTE This may be a pure element, commercially pure metal or an alloy.

**3.4**  
**casting alloy**

metallic material designed for casting into a dental investment mould

**3.5**  
**ceramic veneer**

thin ceramic surface layer present on a metallic material restoration to provide an aesthetic effect

**3.6**  
**metal-ceramic**

dental restoration in which a ceramic veneer is bonded to a metallic material substructure by firing

NOTE 1 This can apply also to the metallic material used for such a restoration. In this context metal-ceramic alloy is a synonym.

NOTE 2 If recommended, such a metallic material may be used without a ceramic veneer.

**3.7**  
**metallic base**

noble metal or base metal with highest concentration by mass fraction in the alloy

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NOTE The name of this element shall precede the words “-based metallic material for dental restoration” or “-based dental casting alloy” or “-based dental metal-ceramic material”, as is appropriate.

**3.8**  
**base-metal alloy**

alloy having a base metal as the principal element

**3.9**  
**as-cast condition**

metallurgical condition of the metallic material in its solid state after removal from the casting machine

NOTE This condition is dependent upon the manufacturer’s recommended cooling procedure (e.g., bench cooling).

**3.10**  
**bench-cooling**

process whereby a casting is retained in its investment with exposed metal uppermost and placed on a flat, insulating surface at ambient temperature in freely circulating air until its temperature falls to ambient

**3.11**  
**hardening**

heat-treatment producing a condition which provides a higher 0,2 % proof strength than the “as-cast” state

NOTE If recommended by the manufacturer, explicit instructions should be given in the instructions for use.