

SLOVENSKI PREDSTANDARD

oSIST prEN ISO 22674:2005

junij 2005

**Zobozdravstvo – Kovinski materiali za stalne in zamenljive zobne obnove in
orodja (ISO/DIS 22674:2005)**

**Dentistry - Metallic materials for fixed and removable dental restorations and
appliances (ISO/DIS 22674:2005)**

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Dentistry - Metallic materials for fixed and removable dental restorations and appliances (ISO/DIS 22674:2005)

Art dentaire - Produits dentaires pour les restaurations fixes et amovibles et appareillages (ISO/DIS 22674:2005)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 55.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Foreword

This document (prEN ISO 22674:2005) 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 is currently submitted to the parallel Enquiry.

Endorsement notice

The text of ISO/DIS 22674:2005 has been approved by CEN as prEN ISO 22674:2005 without any modifications.

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DRAFT INTERNATIONAL STANDARD ISO/DIS 22674

ISO/TC 106/SC 2

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

Art dentaire — Produits dentaires métalliques pour les restaurations fixes et amovibles et appareillages

(Revision of ISO 1562:2004, ISO 6871-1:1994, ISO 6871-2:1994, ISO 8891:1998 and ISO 16744:2003)

ICS 11.060.10

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The CEN Secretary-General has advised the ISO Secretary-General that this ISO/DIS covers a subject of interest to European standardization. **In accordance with the ISO-lead mode of collaboration as defined in the Vienna Agreement, consultation on this ISO/DIS has the same effect for CEN members as would a CEN enquiry on a draft European Standard.** Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month FDIS vote in ISO and formal vote in CEN.

In accordance with the provisions of Council Resolution 15/1993 this document is circulated in the English language only.

Conformément aux dispositions de la Résolution du Conseil 15/1993, ce document est distribué en version anglaise seulement.

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Foreword

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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 is the first edition of this International Standard. This International Standard supersedes the following International Standards which apply to dental casting alloys: ISO 1562, *Dental casting gold alloys*; ISO 6871-1, *Dental base metal casting alloys. — Part 1. Cobalt-based alloys*; ISO 6871-2, *Dental base metal casting alloys. — Part 2. Nickel-based alloys*; ISO 8891, *Dental casting alloys with noble metal content of at least 25% but less than 75%*; and ISO 16744, *Dentistry — Base metal materials for fixed dental restorations*.

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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 dental 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/TC106 Subcommittee 2.

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Dentistry — Metallic materials for fixed and removable dental 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 24 234), dental brazing materials (ISO 9333), nor 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 — Terminology*

ISO 3585, *Borosilicate glass 3.3 — Properties*

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

ISO 6344-1, *Coated abrasives — Grain size analysis — Part 1: Grain size distribution tests*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 9333, *Dentistry — Brazing materials*

ISO 9693, *Metal-ceramic dental restorative systems*

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

ISO 15841, *Orthodontic metallic materials*.¹

ISO 24234, *Dentistry — Mercury and alloys for dental amalgam*

3 Terms and definitions

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

¹ To be published

3.1

alloy

combination of two or more elements having metallic properties not existing in any of the single constituent elements

3.2

noble metal

gold, platinum, palladium, ruthenium, iridium, osmium and rhodium

3.3

base metal

all metallic elements with the exception of noble metals and silver

3.4

hazardous element

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

3.5

metallic material

material having the properties that are associated with the metallic state. This may be a pure element, commercially pure metal or an alloy

3.6

casting alloy

alloy designed for casting into a dental investment mould

3.7

metal-ceramic metallic material

dental metallic material on to which a ceramic veneer can be bonded by firing the ceramic. If recommended, such a metallic material may be used without a ceramic veneer

3.8

metal-ceramic alloy

synonym for metal-ceramic metallic material, specifically restricted to an alloy

3.9

the base of a metallic material

the metallic element with highest concentration by mass fraction in the dental metallic material. The name of this element shall precede the words “-based dental metallic material for restoration” or “-based dental casting alloy” or “-based dental metal-ceramic metallic material”, as is appropriate

3.10

the base of an alloy

synonym for the base of a metallic material, specifically restricted to an alloy

3.11

noble-metal alloy

alloy having gold or elements of the platinum group as principal ingredients

3.12

base-metal alloy

alloy having a base metal as the principal element

3.13

as-cast state

condition of a casting when it has been allowed to bench cool to room temperature while remaining in the investment mould without any further heat treatment