SLOVENSKI STANDARD
SIST EN ISO 9693:2000

01-januar-2000

Dental ceramic fused to metal restorative materials (ISO 9693:1991)

Dental ceramic fused to metal restorative materials (ISO 9693:1991)

Metall-Keramik-Systeme für zahnärztliche Restaurationen (ISO 9693:1991)

Produits pour restaurations dentaires métallo-céramiques (ISO 9693:1991)

Ta slovenski standard je istoveten z: **EN ISO 9693:1994**

ICS:

11.060.10 Zobotehniļ ni materiali Dental materials

SIST EN ISO 9693:2000 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 9693

October 1994

UDC 616.314-089.28:615.464/.465

Descriptors: dentistry, dental materials, alloys, ceramics, specifications, tests, packaging, marking

English version

Dental ceramic fused to metal restorative materials (ISO 9693:1991)

Produits pour restaurations dentaires métallo-céramiques (ISO 9693:1991)

Metall-Keramik-Systeme für zahnärztliche Restaurationen (ISO 9693:1991)

This European Standard was approved by CEN on 1994-10-14. 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 Central Secretariat or to any CEN member.

The European Standards exist 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.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Ref. No. EN ISO 9693:1994 E

Foreword

This European Standard has been taken over by Technical Committee CEN/TC 55 "Dentistry" from the work of ISO/TC 106 "Dentistry" of the International Standardization Organization (ISO).

The text was submitted to the Primary Questionaire Procedure (PQ) and approved as a European Standard.

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 April 1995, and conflicting national standards shall be withdrawn at the latest by April 1995.

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

Endorsement notice

The text of the International Standard ISO 9693 : 1991 was approved by CEN as a European Standard without any modification.

INTERNATIONAL STANDARD

ISO 9693

First edition
1991-06-01

Dental ceramic fused to metal restorative materials

Produits pour restaurations dentaires métallo-céramiques

Reference number
ISO 9693:1991(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.

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.

International Standard ISO 9693 was prepared by Technical Committee ISO/TC 106, *Dentistry*.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

Dental casting alloys and ceramics are suitable for use in fabrication of metal-ceramic dental restorations.

Specific qualitative and quantitative requirements of freedom from biological hazard are not included in this International Standard but it is recommended that, in assessing possible biological or toxicological hazards, reference should be made to ISO/TR 7405:1984, *Biological evaluation of dental materials*, or any more recent edition.

It is intended to replace the metallo-ceramic bond characterization test with a clinically relevant bond test as soon as it is available in a future revision of this Standard. Requirements and test methods for tarnish and corrosion resistance for the components and for the metallo-ceramic system will also be included in the future as soon as they are available.

This page intentionally left blank

Dental ceramic fused to metal restorative materials

1 Scope

This International Standard specifies requirements and test methods for dental casting alloys and ceramics suitable for use in the fabrication of metallo-ceramic dental restorations together with requirements and test methods for the composite structure.

The requirements of this International Standard apply to the alloys and caramics when used in combination and compliance may not be claimed for either alloys or for ceramics alone.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

ISO 6872:1984, *Dental ceramic.*

ISO 6892:1984, *Metallic materials — Tensile testing.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 alloy: Casting alloy suitable for use as the substructure of a metallo-ceramic restoration.

3.2 alloy coatings and bonding agents: Substances (e.g. electroplated layers, or agents containing ceramic and/or alloy particles) which, when applied to the metal substructure and fired under appropriate time-temperature conditions improve aesthetics and may enhance the adherence of ceramic to the coated alloy surface.

3.3 alloy conditioning: Process of conditioning the alloy substructure, either by heat treatment or by other means, designed to enhance the bonding of ceramic to metal.

3.4 heating rate: Rate of increase in temperature in degrees Celsius per minute.

3.5 firing schedule: Temperature-time cycle stating the initial temperature, the time period at the initial temperature, if any, the heating rate, the final temperature, the time period at the final temperature, if any, and in the case of vacuum firing the temperature of vacuum application and the point of release.

3.6 opaque bonding dental ceramic: Ceramic product that, when mixed with distilled water or appropriate modelling liquid, applied to an alloy, and treated according to the firing schedule for the opaque ceramic, will bond to the alloy surface to form a layer that visibly masks the metallic colour.

3.7 dental dentine ceramic: Slightly translucent, pigmented dental ceramic used to give the overall shape and basic colour of the ceramic part of a ceramic fused to metal restoration or prosthesis.

3.8 dental enamel ceramic: Translucent, lightly-pigmented dental ceramic used on a base (or core) of dentine ceramic to simulate the natural tooth enamel.

4 Requirements

4.1 Chemical composition

4.1.1 Alloy

The percentage of each of the constituents of the alloy, in excess of 2 % (m/m), shall be within 0,5 % (m/m) (noble metal alloys) and within 1 % (m/m) (base metal alloys) of the values stated