



**SLOVENSKI STANDARD  
SIST EN ISO 15912:2006**

**01-december-2006**

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**Zobozdravstvo - Polnila in refrakcijski materiali (ISO 15912:2006)**

Dentistry - Casting investments and refractory die materials (ISO 15912:2006)

Zahnheilkunde - Einbettmassen und hochtemperaturbeständige Stumpfmaterialien (ISO 15912:2006)

Art dentaire - Revêtements et matériaux pour modèles réfractaires (ISO 15912:2006)

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**ICS:**

11.060.10      Z[ à [ c @ ã } ã æ ã ã      Dental materials

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ICS 11.060.10

English Version

Dentistry - Casting investments and refractory die materials (ISO  
15912:2006)

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réfractaires (ISO 15912:2006)

Zahnheilkunde - Einbettmassen und  
hochtemperaturbeständige Stumpfmaterialien (ISO  
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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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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## **Foreword**

This document (EN ISO 15912:2006) 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 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of an identical text or by endorsement, at the latest by April 2007, and conflicting national standards shall be withdrawn at the latest by April 2007.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 — Casting investments and  
refractory die materials**

*Art dentaire — Revêtements et matériaux pour modèles réfractaires*

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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 15912 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 2, *Prosthetic materials*.

This first edition of ISO 15912 contains the requirements and test methods for dental casting, brazing and refractory investment and die materials. It cancels and replaces ISO 7490:2000, ISO 9694:1996, ISO 11244:1999, ISO 11245:1999 and ISO 11246:1996.

In general, this International Standard contains the same or similar requirements to those contained in the five International Standards it replaces. An exception is the requirement for setting expansion, which has been removed due to the continuing inability to find a suitably reliable and reproducible test method for all binder chemistries.



## Introduction

Dental investment and other refractory materials are used for a variety of applications within the dental laboratory. Historically, standards were developed on the basis of the chemistry of the binding system used or specific type of application, resulting in five separate International Standards. This single International Standard gives the requirements and test methods for dental casting, brazing and refractory investments and refractory die materials, regardless of the nature of the binding system or the particular application.

This International Standard classifies investments into types according to their intended use and classes according to the recommended burn-out procedure.

A specific quantitative requirement for setting expansion is not included in this International Standard. However, if the setting expansion of a gypsum-bonded investment is measured, use of the procedure contained in ISO 6873:1998 should be considered. This procedure is not recommended for phosphate-bonded products.

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# Dentistry — Casting investments and refractory die materials

## 1 Scope

This International Standard is applicable to dental casting, brazing and refractory investments and refractory die materials, regardless of the nature of the binding system or the particular application.

This International Standard classifies investments into types according to their intended use and classes according to the burn-out procedure recommended by the manufacturer.

This International Standard specifies requirements for the essential physical and mechanical properties of the materials and the test methods used to determine them.

This International Standard also includes requirements for the information and instructions which accompany each package.

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

ISO 1942, *Dentistry — Vocabulary* [SIST EN ISO 15912:2006](https://standards.iteh.ai/catalog/standards/sist/en-iso-15912-2006)

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times* <https://standards.iteh.ai/catalog/standards/sist/1a38662f-9714-422a-b1d9-3dc5f04453af/sist-en-iso-15912-2006>

## 3 Terms and definitions

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

### 3.1

#### **dental casting investment material**

refractory filler powder and binder system which, mixed with a specified liquid, hardens to form the mould for casting dental restorations

NOTE Generally, the refractory powder consists of oxides such as silica. Depending upon its chemistry, all the components of the binder can be in the liquid, or some can be dispersed (as a powder) in the refractory powder. The liquid can be pure water or a special liquid, as required by the chemistry of the binding system.

### 3.2

#### **refractory die material**

powder mixture of a refractory filler and binder system designed, specifically (when mixed with a particular liquid) to allow the formation of a hardened die suitable for the production of dental ceramic restorations using the sintering technique

### 3.3

#### **brazing investment material**

powder mixture of a refractory filler and binder system, designed specifically (when mixed with a particular liquid) to allow the formation of a cast upon which components are held in place while they are being joined by brazing

NOTE The cast can be referred to as the model, even though this is a deprecated term.