



NSAI
Standards

Irish Standard
I.S. EN ISO 22674:2016

Dentistry - Metallic materials for fixed and removable restorations and appliances (ISO 22674:2016)

I.S. EN ISO 22674:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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National Foreword

I.S. EN ISO 22674:2016 is the adopted Irish version of the European Document EN ISO 22674:2016, Dentistry - Metallic materials for fixed and removable restorations and appliances (ISO 22674:2016)

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EUROPEAN STANDARD

EN ISO 22674

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2016

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Supersedes EN ISO 22674:2006

English Version

Dentistry - Metallic materials for fixed and removable restorations and appliances (ISO 22674:2016)

Médecine bucco-dentaire - Matériaux métalliques pour les restaurations fixes et amovibles et les appareillages (ISO 22674:2016)

Zahnheilkunde - Metallische Werkstoffe für festsitzenden und herausnehmbaren Zahnersatz und Applikationen (ISO 22674:2016)

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EN ISO 22674:2016 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 22674:2016) 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of an identical text or by endorsement, at the latest by August 2016, and conflicting national standards shall be withdrawn at the latest by August 2016.

This document supersedes EN ISO 22674:2006.

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**INTERNATIONAL
STANDARD**

**ISO
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Second edition
2016-01-15

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

*Médecine bucco-dentaire — Matériaux métalliques pour les
restaurations fixes et amovibles et les appareillages*



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Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Classification	3
5 Requirements	4
5.1 Chemical composition.....	4
5.1.1 Reported composition.....	4
5.1.2 Permitted deviation from the reported composition for elements.....	4
5.2 Hazardous elements.....	4
5.2.1 Hazardous elements.....	4
5.2.2 Limits for the hazardous elements cadmium and beryllium.....	4
5.2.3 Limit for lead.....	4
5.2.4 Nickel.....	5
5.3 Biocompatibility.....	5
5.4 Mechanical properties.....	5
5.4.1 General.....	5
5.4.2 Proof stress of 0,2 % non-proportional extension.....	6
5.4.3 Elongation after fracture.....	6
5.5 Elastic modulus.....	7
5.5.1 Precision of measurement method.....	7
5.5.2 Determination of compliance with the requirements for Type 5 materials.....	7
5.5.3 Mean value.....	8
5.6 Density.....	8
5.7 Corrosion resistance for material integrity.....	8
5.8 Tarnish resistance.....	8
5.9 Solidus and liquidus temperatures (alloy) or melting point (commercially pure metal).....	8
5.10 Thermal expansion coefficient.....	8
5.11 Information, instructions and marking.....	9
6 Sampling	9
7 Preparation of test specimens	9
7.1 General.....	9
7.2 Heat treatment.....	9
7.2.1 General conditions.....	9
7.2.2 Metallic materials for which a heat treatment is recommended in the manufacturer's instructions for use.....	9
7.2.3 Metallic material for metal-ceramic restorations.....	9
7.2.4 Metallic materials for which no heat-treatment is recommended in the manufacturer's instructions for use.....	9
7.3 Proof stress of 0,2 % non-proportional extension and the elongation after fracture: Metallic materials for which production of conventional specimens is possible.....	10
7.4 Type 0 metallic materials for which the production of conventional specimens is not possible.....	11
7.5 Elastic moduli.....	11
7.5.1 General.....	11
7.5.2 Tensile strain method.....	11
7.5.3 Flexure method (three or four point bending).....	11
7.5.4 Acoustic resonance method.....	12
7.6 Density measurement.....	13
7.7 Corrosion resistance.....	13
7.8 Tarnish resistance and colour.....	13

ISO 22674:2016(E)

7.9	Linear thermal expansion	13
8	Test methods	13
8.1	Information, instructions and marking	13
8.2	Chemical composition	14
8.3	Mechanical testing	14
8.3.1	Apparatus	14
8.3.2	Test procedure	14
8.4	Proof stress of 0,2 % non-proportional extension	15
8.4.1	Calculation	15
8.4.2	Mean value	15
8.5	Percentage elongation after fracture	15
8.5.1	Calculation	15
8.5.2	Mean value	15
8.6	Elastic modulus measurement	15
8.6.1	Tensile strain method	15
8.6.2	Flexure method in three- or four-point bending mode	16
8.6.3	Acoustic resonance method	18
8.7	Calculation of elasticity parameters from acoustic measurement	19
8.7.1	General	19
8.7.2	Elastic modulus	20
8.7.3	Shear modulus	20
8.7.4	Poisson ratio	21
8.8	Density	21
8.8.1	Preparation of test specimens	21
8.8.2	Reagents	21
8.8.3	Apparatus	21
8.8.4	Procedure	21
8.9	Corrosion resistance by the static immersion procedure of ISO 10271:2011	21
8.9.1	Preparation of test specimens	21
8.9.2	Reagents	21
8.9.3	Apparatus	21
8.9.4	Test solution	22
8.9.5	Test procedure	22
8.9.6	Analysis	22
8.9.7	Treatment of data	22
8.10	Sulfide tarnish test (cyclic immersion)	22
8.11	Sulfide tarnish test (static immersion)	22
8.12	Solidus and liquidus temperatures (dental casting alloys) or melting point (commercially pure metals)	22
8.12.1	Cooling curve method	22
8.12.2	Thermal analysis method	23
8.13	Linear thermal expansion	24
9	Information and instructions for use	24
9.1	Information	24
9.2	Processing instructions	25
10	Marking and labelling	25
10.1	Marking	25
10.2	Labelling of the package	25
Annex A (informative) Tensile testing of a non-cast Type 0 metallic material that is intended for use in a thickness between 0,1 mm and 0,5 mm		27
Annex B (normative) Calculation of uncertainty for elasticity measurement		30
Annex C (informative) Measurement of Poisson ratio		34
Bibliography		36

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 106, *Dentistry*, Subcommittee SC 2, *Prosthetic materials*.

This second edition cancels and replaces the first edition (ISO 22674:2006), which has been technically revised with the following changes:

- Corrosion resistance measurement was referred to the recent standard ISO 10271:2011.
- A second tarnish test was included, referring to provisions in ISO 10271:2011.
- Clarification of the term “free of” was added to the requirements of composition and labelling;
- Lead was added as a hazardous element.
- Measurement of elasticity was revised. Beside the method of calculation of elastic modulus using an extensometer, other alternative methods were added, namely, the flexure method in three- and four-point bending and the acoustic resonance method.
- Informative [Annex A](#) was added, dealing with tensile testing of non-cast Type 0 metallic materials intended for use in a thickness between 0,1 and 0,5 mm.
- Normative [Annex B](#) was added, giving information on calculation of uncertainty for elastic measurement.
- Informative [Annex C](#) was added, giving information for measurement of Poisson ratio.

ISO 22674:2016(E)

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 has to 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 9693-1.

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/SC 2.

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 restorations and appliances, including metallic materials recommended for use either with or without a ceramic veneer, or recommended for both uses, and specifies their requirements. Furthermore, it specifies requirements with respect to packaging and marking the products and to the instructions to be supplied for the use of these materials, including products delivered for sale to a third party.

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. wires, brackets, bands and screws).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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*

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

ISO 5832-2, *Implants for surgery — Metallic materials — Part 2: Unalloyed titanium*

ISO 5832-3¹⁾, *Implants for surgery — Metallic materials — Part 3: Wrought titanium 6-aluminium 4-vanadium alloy*

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

ISO 6892-1²⁾, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature*

ISO 9513, *Metallic materials — Calibration of extensometer systems used in uniaxial testing*

ISO 9693-1, *Dentistry — Compatibility testing — Part 1: Metal-ceramic systems*

ISO 10271:2011, *Dentistry — Corrosion test methods for metallic materials*

ISO 15223-1:2012, *Medical devices — Symbols to be used with medical device labels, labelling and information to be supplied — Part 1: General requirements*

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 (i. e. gold and metals of the platinum group) and silver

1) To be published.

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