Irish Standard
I.S. EN ISO 9693-2:2016

Dentistry - Compatibility testing - Part 2: Ceramic-ceramic systems (ISO 9693-2:2016)

I.S. EN ISO 9693-2:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN ISO 9693-2:2016 is the adopted Irish version of the European Document EN ISO 9693-2:2016, Dentistry - Compatibility testing - Part 2: Ceramic-ceramic systems (ISO 9693-2:2016)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 9693-2

March 2016

ICS 11.060.10

Supersedes EN ISO 9693:2000

English Version

Dentistry - Compatibility testing - Part 2: Ceramic-ceramic systems (ISO 9693-2:2016)

Médecine bucco-dentaire - Essais de compatibilité - Partie 2: Systèmes céramo-céramiques (ISO 9693-2:2016)

Zahnheilkunde - Verbundprüfung - Teil 2: Keramik-Keramiksysteme (ISO 9693-2:2016)

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 9693-2:2016) 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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 9693:2000.

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

Endorsement notice

The text of ISO 9693-2:2016 has been approved by CEN as EN ISO 9693-2:2016 without any modification.

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I.S. EN ISO 9693-2:2016

INTERNATIONAL STANDARD

ISO 9693-2

First edition
2016-02-15

Dentistry — Compatibility testing —

Part 2: Ceramic-ceramic systems

Médecine bucco-dentaire — Essais de compatibilité —

Partie 2: Systèmes céramo-céramiques

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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.

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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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, *Prosthodontic materials*.

This first edition, together with ISO 9693-1, cancels and replaces ISO 9693:1999.

This part of ISO 9693 replaces the bi-material portions of ISO 9693:1999 to focus only on the compatibility of veneering porcelains fired onto substrate ceramics. Tests of all ceramic materials for either metal or ceramic substructures are now contained in a global ceramics standard ISO 6872. Some elements of ISO 9693:1999 remain for all materials (e.g. measurement of thermal expansion coefficients) and one remains only for porcelain fired to zirconia (Schwickerath bond characterization test). New requirements have been added for porcelain-ceramic systems, including thermal shock testing for ceramic-ceramic compatibility (allowing many protocols that are in widespread use within industry).

ISO 9693 consists of the following parts, under the general title *Dentistry — Compatibility testing*:

— *Part 1: Metal-ceramic systems*

— *Part 2: Ceramic-ceramic systems*

Introduction

Dental porcelains and substructure ceramics are suitable for use in fabrication of all-ceramic dental restorations. Their compatibility under mechanical and thermal loading is essential if they are to function in a prosthetic construction. This part of ISO 9693 sets out requirements and test methods for allowing the risks associated with masticatory forces and the oral environment to be assessed.

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

Dentistry — Compatibility testing —

Part 2: Ceramic-ceramic systems

1 Scope

This part of ISO 9693 specifies requirements and test methods to assess the compatibility of ceramic-ceramic materials used for dental restorations by testing composite structures.

The requirements of this part of ISO 9693 apply when different ceramic components are used in combination. Compliance cannot be claimed for either ceramic alone.

For requirements of ceramic materials, see ISO 6872.

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 6872:2015, *Dentistry — Ceramic materials*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942 and ISO 6872 and the following apply.

3.1
ceramic veneer
full structure of fired ceramic layers applied to a substrate material

3.2
conditioning
process of treating the ceramic substructure to enhance the bonding of the veneer ceramic

3.3
liner
substance which, when applied to the ceramic substructure and fired under appropriate time-temperature conditions, may improve aesthetics and/or adherence of ceramic to the coated ceramic surface

4 Requirements

4.1 Biocompatibility

See the Introduction for guidance on biocompatibility.