INTERNATIONAL STANDARD

ISO 9693-1

First edition
2012-02-15

Dentistry — Compatibility testing —

Part 1: Metal-ceramic systems

Médecine bucco-dentaire — Essais de compatibilité —

Partie 1: Systèmes métallo-céramiques

Reference number
ISO 9693-1:2012(E)

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Published in Switzerland

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 9693-1 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 2, *Prosthodontic materials*.

This first edition of ISO 9693-1, together with ISO 9693-2[1)], cancels and replaces ISO 9693:1999. It also incorporates the Amendment ISO 9693:1999/Amd 1:2005.

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

— *Part 1: Metal-ceramic systems*

The following parts are under preparation:

— *Part 2: Ceramic-ceramic systems*

1) Under preparation.

Introduction

Dental metallic materials and ceramics are suitable for use in the fabrication of metal-ceramic dental restorations.

Dentistry — Compatibility testing —

Part 1:
Metal-ceramic systems

1 Scope

This part of ISO 9693 specifies test methods for determining the compatibility of metallic and ceramic materials used for dental restorations by testing the composite structure.

The requirements given in this part of ISO 9693 are applicable to metallic materials and ceramics when used in combination, and are not applicable to either metallic materials or ceramics when used alone.

NOTE Requirements for metallic materials are given in ISO 22674; requirements for ceramic materials are given in ISO 6872.

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 — Vocabulary*

ISO 6872:2008, *Dentistry — Ceramic materials*

ISO 22674:2006, *Dentistry — Metallic materials for fixed and removable restorations and appliances*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1942, ISO 6872 and ISO 22674 apply.

4 Requirements

4.1 Biocompatibility

Specific qualitative and quantitative test methods for demonstrating freedom from unacceptable biological risks are not included in this part of ISO 9693, but it is recommended that, for the assessment of such biological risks, reference be made to ISO 10993-1 and ISO 7405.

4.2 Properties of metal-ceramic system

The debonding/crack-initiation strength of the metallic material and at least one specified (named) ceramic present shall be greater than 25 MPa. The debonding/crack-initiation strength of the ceramic and at least one specified (named) metallic material present shall be greater than 25 MPa.

Testing shall be carried out in accordance with 6.4.