INTERNATIONAL STANDARD

ISO 6872

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Dentistry — Ceramic materials

Médecine bucco-dentaire — Matériaux céramiques

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Foreword

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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, *Prosthodontic materials.*

This fourth edition cancels and replaces the third edition (ISO 6872:2008), which has been technically revised with the following changes:

— new edition of ISO 23146:2012 for fracture toughness by SEVNB has been added as an alternative in Annex A. It has a rigorous procedure developed by ISO/TC 206, *Fine ceramics*;

— a restriction on the use of the SEVNB method for fracture toughness determination for 3Y-TZP has been added. In most cases, the notch cannot be made sharp enough with a razor blade;

— maximum chamfer size on bend bars has been reduced for the case of the thin specimens;

— recommendations to grind lengthwise were added to the bend bar preparation step in 7.3.1.2.2;

— the Y equations for SEVNB fracture toughness in 3–point have been refined and expanded to cover more configurations;

— modification to Table 1 changing "aesthetic" to "monolithic".

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 or toxicological hazards, reference be made to ISO 10993-1 and ISO 7405.

Dentistry — Ceramic materials

1 Scope

This International Standard specifies the requirements and the corresponding test methods for dental ceramic materials for fixed all-ceramic and metal-ceramic restorations and prostheses.

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

ISO 1942, *Dentistry — Vocabulary*

ISO 13078, *Dentistry — Dental furnace — Test method for temperature measurement with separate thermocouple*

3 Terms and definitions

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

3.1 Material

3.1.1
addition ceramic
add-on ceramic
correction ceramic
dental ceramic material which is fired at a reduced temperature and is normally applied to restore contact areas on a dental restoration or prosthesis

3.1.2
aesthetic ceramic
dental porcelain (3.1.5) or *glass ceramic* (3.1.10) having appropriate translucency and colour used to mimic the optical properties of natural teeth

3.1.3
chromatic dentin ceramic
dentine ceramic having a high strength or saturation of the hue (color)

3.1.4
dental ceramic
inorganic, non-metallic material which is specifically formulated for use when processed according to the manufacturers' instructions to form the whole or part of a dental restoration or prosthesis

3.1.5
dental porcelain
predominantly, glassy *dental ceramic* (3.1.4) material used mainly for aesthetics in a dental restoration or prosthesis

3.1.6
dentine ceramic
dental ceramic (3.1.4) material used to form the overall shape and basic colour of a dental restoration or prosthesis simulating the natural tooth dentine