

ISO 6872:2015-06 (E)

Dentistry - Ceramic materials

Contents		Page
Foreword	v	
Introduction	vi	
1 Scope	1	
2 Normative references	1	
3 Terms and definitions	1	
3.1 Material	1	
3.2 Processing	3	
3.3 Properties	4	
4 Types, classes, and their identification	4	
5 Requirements	6	
5.1 Uniformity	6	
5.2 Freedom from extraneous materials	6	
5.3 Mixing and condensation properties of type I ceramics	6	
5.4 Physical and chemical properties	6	
5.5 Biocompatibility	6	
5.6 Shrinkage factor	6	
6 Sampling	6	
6.1 Type I ceramics	6	
6.2 Type II ceramics	7	
7 Test methods	7	
7.1 Preparation of test specimens	7	
7.1.1 Components of test specimens (type I ceramics)	7	
7.1.2 Apparatus for mixing	7	
7.1.3 Method of mixing	7	
7.1.4 Procedure for specimen fabrication	7	
7.1.5 Firing	8	
7.2 Radioactivity of dental ceramic	8	
7.2.1 Preparation of samples	8	
7.2.2 Counting procedure	8	
7.2.3 Assessment of results	8	
7.3 Flexural strength	8	
7.3.1 Three-point and four-point bending tests	8	
7.3.2 Biaxial flexure test (piston-on-three-ball test)	12	
7.4 Linear thermal expansion coefficient	14	
7.4.1 Apparatus	14	
7.4.2 Preparing of test specimens (type I and type II ceramics)	14	
7.4.3 Dilatometric measurement	14	
7.4.4 Assessment of results	14	
7.5 Glass transition temperature	14	
7.5.1 Operating procedure	14	
7.5.2 Assessment of results	15	
7.6 Chemical solubility	15	
7.6.1 Reagent	15	
7.6.2 Apparatus	15	

7.6.3	Preparation of test specimens	16
7.6.4	Procedure	16
7.6.5	Calculation and assessment of results	16
8	Information and instructions	16
8.1	Information	16
8.1.1	General	16
8.1.2	Type I Ceramics	16
8.1.3	Type II ceramics	16
8.2	Instructions for use	17
9	Packaging, marking, and labelling	17
9.1	Packaging	17
9.2	Marking and labelling	17
	Annex A (informative) Fracture toughness	19
	Annex B (informative) Weibull statistics	26
	Bibliography	28