

INTERNATIONAL STANDARD

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Dental restorations — Phosphate-bonded refractory die materials

*Restaurations dentaires — Produits pour modèles réfractaires à liant
phosphate*



Contents

1 Scope 1

2 Terms and definitions 1

3 Requirements 1

4 Sampling, test conditions and mixing 2

5 Test methods..... 3

6 Instructions 7

7 Marking 7

Annex A (normative) Linear setting expansion..... 9

Bibliography 11

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

International Standard ISO 11245 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 2, *Prosthetic materials*.

Annex A forms a normative part of this International Standard.

iii

Introduction

During preparation of this International Standard for phosphate-bonded refractory die material, consideration was made to address issues regarding the linear setting expansion requirement. The importance of the setting expansion measurement relative to the performance of a phosphate-bonded refractory die material is recognized. However, measurement of the linear setting expansion with existing apparatus, method and techniques may provide results with a high degree of variation. It is therefore recommended that the test remain in this International Standard as a normative annex until suitable means are available to achieve consistent results in the measurement of linear setting expansion.

Dental restorations — Phosphate-bonded refractory die materials

1 Scope

This International Standard is applicable to phosphate bonded refractory die materials used in the production of dental restorations by a sintering technique.

It specifies requirements for the essential physical properties of the refractory die material and the test methods to be used to determine these properties. It also includes a requirement for adequate instructions to accompany each package.

2 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

2.1

refractory die material

powder mixture of a refractory filler system and a binding system specially designed so that when mixed with a liquid it forms a hardened die suitable for the production of dental ceramic restorations using the sintering technique

NOTE The refractory filler system usually consists of refractory oxides such as silica. The binding system usually consists mainly of an acidic phosphate such as ammonium dihydrogenphosphate together with a basic oxide such as magnesium oxide. When the mixture is mixed with a suitable liquid it forms a paste that hardens at room temperature to form a refractory die. The suitable liquid may be the special liquid (2.2), the special liquid diluted with water, or it can be water alone.

2.2

special liquid

liquid made available by the manufacturer or supplier for mixing with the powder mixture

NOTE The special liquid usually consists mainly of a suspension of colloidal silica particles in water.

3 Requirements

3.1 Quality

The powder (2.1) shall be uniform and free from foreign matter and lumps when examined visually. If a special liquid (2.2) is required, it shall be free of sediment.

3.2 Fluidity

The diameter of the base of the set mass shall be at least 70 mm. Test in accordance with 5.1.

3.3 Setting time

The setting time shall not differ by more than 30 % from the time stated by the manufacturer. If the manufacturer gives a range of setting time, then the setting time shall not differ from the midpoint of this range by more than 30 %. Test in accordance with 5.2 and report in accordance with 6 h).