

INTERNATIONAL STANDARD

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Dental ethyl silicate bonded casting investments

Revêtements dentaires pour coulées à liant silicate d'éthyle



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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.

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.

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International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

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Dental ethyl silicate bonded casting investments

1 Scope

This International Standard specifies a method for ethyl silicate bonded casting investments to be assessed for their efficacy for casting dental alloy restorations.

This International Standard applies to ethyl silicate bonded investments used in the fabrication of dental base metal casting alloy restorations.

This International Standard specifies requirements for the essential physical properties of the investment and methods for their determination.

It also includes requirements for adequate instructions to accompany each package.

2 Definitions

For the purpose of this International Standard, the following definitions apply.

2.1 ethyl silicate bonded casting investment: Powder mixture of a refractory filler system and an active component specially designed for use as an investment for casting dental alloy restorations.

NOTE 1 The refractory filler system usually consists mainly of silica. The active component is a basic oxide, usually magnesium oxide.

2.2 special liquid: Liquid made available by the manufacturer or supplier for mixing with the investment powder.

NOTE 2 Typically two or three special liquids are required for any given system. One of the liquids contains the ethyl

silicate binder component. The other liquid(s) contain(s) complementary components. All liquids mixed together form the binder liquid for mixing with the investment powder.

When the powder and binder liquid are mixed, a paste is formed which hardens to form first a silica gel, which later is converted to silica.

3 Requirements

3.1 General

The powder shall be dry and free from visible impurities and lumps. The special liquids shall be free of sediment. Evaluate in accordance with 4.2.

3.2 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 times, then the setting time shall not differ from the midpoint of this range by more than 30 %. Test in accordance with 4.3.

3.3 Compressive strength

The compressive strength of the investment at room temperature shall not be less than 1,5 MPa. Test in accordance with 4.4.

3.4 Linear thermal expansion

The linear thermal expansion shall not differ by more than 15 % from the value stated by the manufacturer. If the manufacturer gives a range of linear thermal ex-