
Dentistry — Laser welding

Médecine bucco-dentaire — Soudage par laser



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Published in Switzerland

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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.

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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.

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ISO 28319 was prepared by Technical Committee ISO/TC 106, *Dentistry*, Subcommittee SC 2, *Prosthetic materials*.

Dentistry — Laser welding

1 Scope

This International Standard specifies requirements and test methods for laser welding, in the dental laboratory, of materials suitable for use in metallic restorations and appliances.

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 3585, *Borosilicate glass 3.3 — Properties*

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

ISO 6344-1, *Coated abrasives — Grain size analysis — Part 1: Grain size distribution test*

ISO 10271, *Dental metallic materials — Corrosion test methods*

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

3 Terms and definitions

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

3.1

laser welding

method for joining similar or dissimilar metallic materials, using a laser beam as heat source, with or without a metallic filler material (welding rod), which produces coalescence by melting the metallic materials in order to join them by creating a fusion zone

3.2

brazing

method for joining similar or dissimilar metallic materials by applying heat and using a metallic brazing material as filler

NOTE 1 The brazing materials used have liquidus temperatures above 450 °C, but below the melting range of the metallic materials being joined. They flow by capillary action into the gap between the metallic base materials and join them by creating a metallurgical bond.

NOTE 2 Brazing differs from welding in that brazing does not melt the metallic base materials.