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Application Note

ISO 6872 – Dental Materials Testing



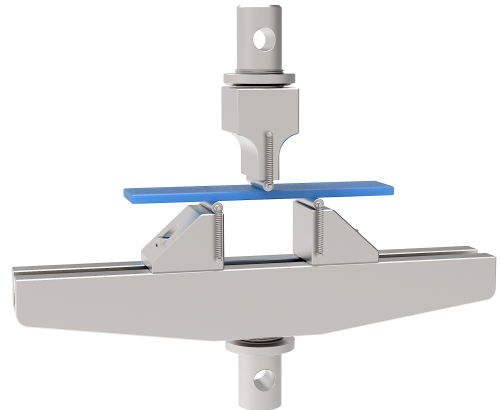
Background

In addition to the aesthetic aspects, dental ceramics must also meet mechanical requirements with regard to strength, wear and durability. The flexural strength testing of dental ceramics is a prerequisite for research and development as well as for product approval. This test can be performed according to ISO 6872¹, which defines the methodology and parameters for the mechanical testing of the flexural strength properties of ceramics under laboratory conditions.

Test Setup

The static and dynamic strength are determined in 3-point or 4-point bending tests, whereby the bending device consists of two fixed and parallel supports.

The sample is fixed or clamped on the sample holder. The device offers specific advantages for tests according to ISO 6872 with regard to spans, centering and alignment with a V-slot. A force is applied to the specimen via a punch. A cyclic, sinusoidal load is applied to the implant until the specimen breaks or until the maximum number of cycles is reached.



Equipment

The fatigue test according to ISO 6872 can be performed easily, reliably and reproducibly with servo-dynamic testing systems from **THELKIN** and the corresponding specimen holder:

- **THELKIN Servo-Dynamic Load Frame SDL-M-010** - complies with the specifications of the standard and enables easy and safe specimen mounting, programming of the test as well as data acquisition and test execution.
- **4-Point-Bending Fixture FI.BE.4P** - enables fast and precise fixing of the specimen.

The test system can also be equipped with an uninterruptible power supply, allowing long-term tests to be performed safely.

¹DIN EN ISO 6872:2019-01: Dentistry - Ceramic materials.

