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Fine ceramics (advanced ceramics, advanced technical ceramics) — Test method for tensile strength of monolithic ceramics at room temperature

Céramiques techniques — Méthode d'essai de résistance à la traction des céramiques monolithiques à température ambiante

Reference number
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Contents

Page

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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 2.

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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15490 was prepared by Technical Committee ISO/TC 206, *Fine ceramics*.

This second edition cancels and replaces the first edition (ISO 15490:2000), which has been technically revised.

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1 Scope

This International Standard specifies the test method for determining the tensile strength under uniaxial loading of monolithic fine ceramics and whisker or particulate-reinforced ceramic composites at room temperature. This test method, in which parasitic bending is minimized, may be used for material development, material comparison, quality assurance, characterization and design data generation.

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 3611:1978, *Micrometer callipers for external measurement*

ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system*

3 Terms and definitions

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

3.1
tensile stress
value of tensile force applied to a test specimen divided by the original cross-sectional area of the gauge part of a test specimen

3.2
tensile strength
maximum tensile stress applied to a test specimen during a tensile strength test

3.3
maximum tensile force
maximum force applied to a test specimen during a tensile strength test

3.4
gauge section
parallel portion of the test specimen having the same cross-section as its middle part

3.5
gripped region
end part of a test specimen which is held by the gripping device of a tensile test machine

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