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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
ISO 15490:2000(E)

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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.

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

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

Annex A of this International Standard is for information only.

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

1 Scope

This International Standard specifies the method of test 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 normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3611:1978, *Micrometer callipers for external measurement.*

ISO 7500-1:1999, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring sytem.*

3 Terms and definitions

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

3.1
tensile stress
value of tensile load applied to a test specimen divided by the original 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 load
maximum load applied to a test specimen during a tensile strength test

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